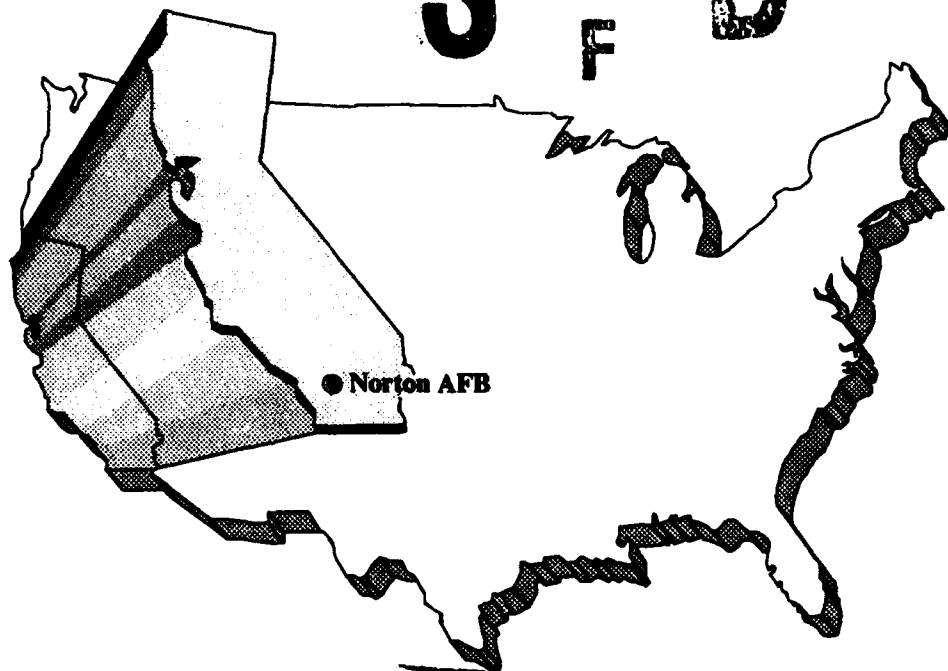


AD-A281 281



FINAL  
SOCIOECONOMIC IMPACT ANALYSIS  
STUDY  
June 1993

DTIC  
ELECTE  
JUL 08 1994  
S F D



This document has been approved  
for public release and sale; its  
distribution is unlimited

DISPOSAL AND REUSE OF  
NORTON AIR FORCE BASE, CALIFORNIA

94-20833



2468x

DTIC QUALITY INSPECTED 8

94 7 7 059

**FINAL**

**SOCIOECONOMIC IMPACT ANALYSIS STUDY**

**DISPOSAL AND REUSE OF  
NORTON AIR FORCE BASE,  
CALIFORNIA**

**JUNE 1993**

Accession For		
NTIS	CRA&I	<input checked="" type="checkbox"/>
DTIC	TAB	<input type="checkbox"/>
Unannounced		<input type="checkbox"/>
Justification		
By <i>per ltr</i>		
Distribution /		
Availability Codes		
Dist	Avail and/or Special	
A-1		

## SUMMARY

---

The Defense Secretary's Commission on Base Realignment and Closure in 1988 identified Norton Air Force Base (AFB), California, for closure. The Secretary of Defense adopted, in total, the Commission's recommendations. Norton AFB is scheduled to be closed by March 1994.

*The Final Environmental Impact Statement (EIS) for the Closure of Norton Air Force Base, California* was released by the Air Force in July 1990. The *Final EIS for the Disposal and Reuse of Norton Air Force Base, California*, analyzes environmental effects of the disposition of the base and its reuse under alternative redevelopment plans.

*The Socioeconomic Impact Analysis Study* is a companion document to the EIS, but is not required by the National Environmental Policy Act of 1969. It addresses the socioeconomic effects of closure and potential reuse of the base. The scope of this study includes economic activity, population, housing, public services, public finance, transportation, utilities, and airspace.

Norton AFB is located in San Bernardino County, about 65 miles east of Los Angeles and 50 miles west of Palm Springs. The base is located primarily within the city limits of San Bernardino. Direct and secondary employment related to base activities, in the region made up of San Bernardino and Riverside counties, has decreased from more than 12,600 jobs in 1987 to almost 10,400 jobs in 1990. Employment is expected to continue declining during the base closure process through 1994, and then level off at about 70 jobs by the start of 1995.

If the base is placed in caretaker status and not reused for other purposes, most or all of the "mothballed" facilities would be restricted from public access. Security and minimal maintenance activities would provide only limited employment opportunities on the base. A total of 50 direct jobs would be required to maintain the premises; this maintenance activity would generate approximately 20 secondary jobs in the region. This closure and caretaker scenario serves as post-closure conditions and the No-Action Alternative for this study.

Norton AFB is scheduled to close during a period of continued job and population growth in the region of influence (ROI), i.e., San Bernardino and Riverside counties. Even with the base closed and assuming no reuse occurs through the year 2015, employment in the two-county ROI is projected to increase from approximately 1.1 million jobs in 1995 to 1.7 million jobs by the year 2015. These projections also incorporate the scheduled closure of George AFB in the Victor Valley area of San Bernardino County and assume no reuse, the transfer of some Norton AFB personnel to

March AFB in Riverside, and the retention of the Ballistic Missile Organization (BMO) at Norton AFB.

This report analyzes the socioeconomic effects of four conceptual plans involving reuse of the base by private and public entities. All four plans are compared to the projected post-closure conditions as described for the No-Action Alternative, and, where appropriate, to preclosure conditions. The Proposed Action and alternative reuse plans are the following:

- Proposed Action, or Airport with Office/Industrial Park Alternative
- Airport with Mixed Use Alternative
- Aircraft Maintenance Center Alternative
- Non-Aviation Alternative.

These plans all involve new construction and/or base renovation activity. Such activities, however, are not scheduled to begin until after the base is closed. The No-Action Alternative does not involve any construction or renovation.

The Proposed Action would utilize Norton AFB for several aviation-related uses including aircraft maintenance, as well as non-aviation-related uses. The primary function of the Proposed Action would be to provide commercial aviation services to the region while integrating reuse of the base, including industrial, commercial, and recreational land uses (see Section 1.4.1). Under this alternative much of the base infrastructure would be demolished and replaced with new facilities.

The Airport with Mixed Use Alternative is similar to the Proposed Action but, in addition, includes 61 acres designated for residential use (see Section 1.4.2) and utilizes more of the existing base infrastructure.

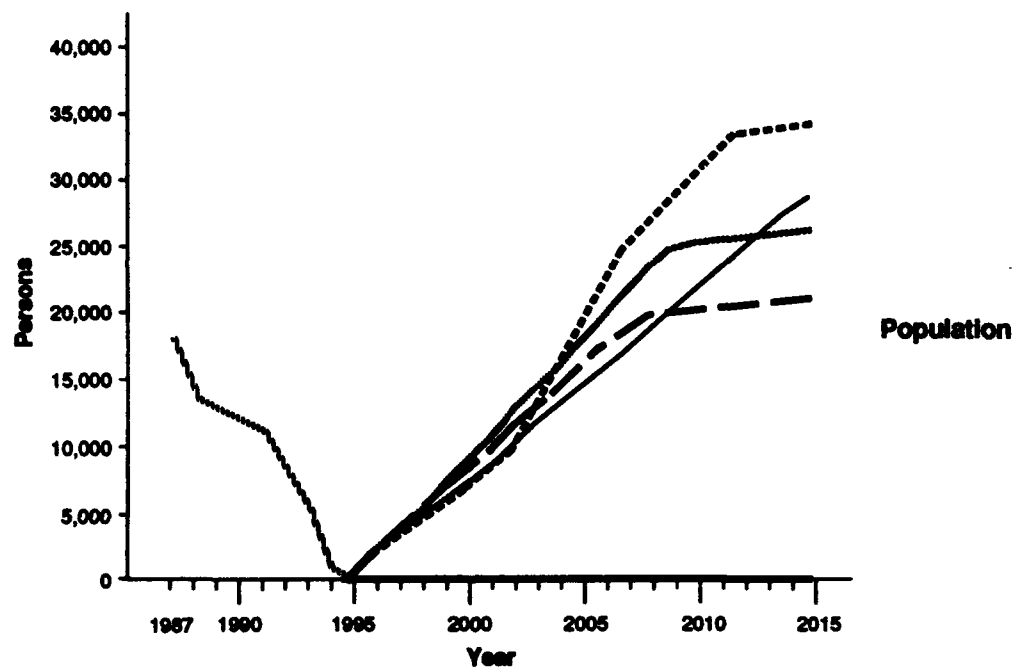
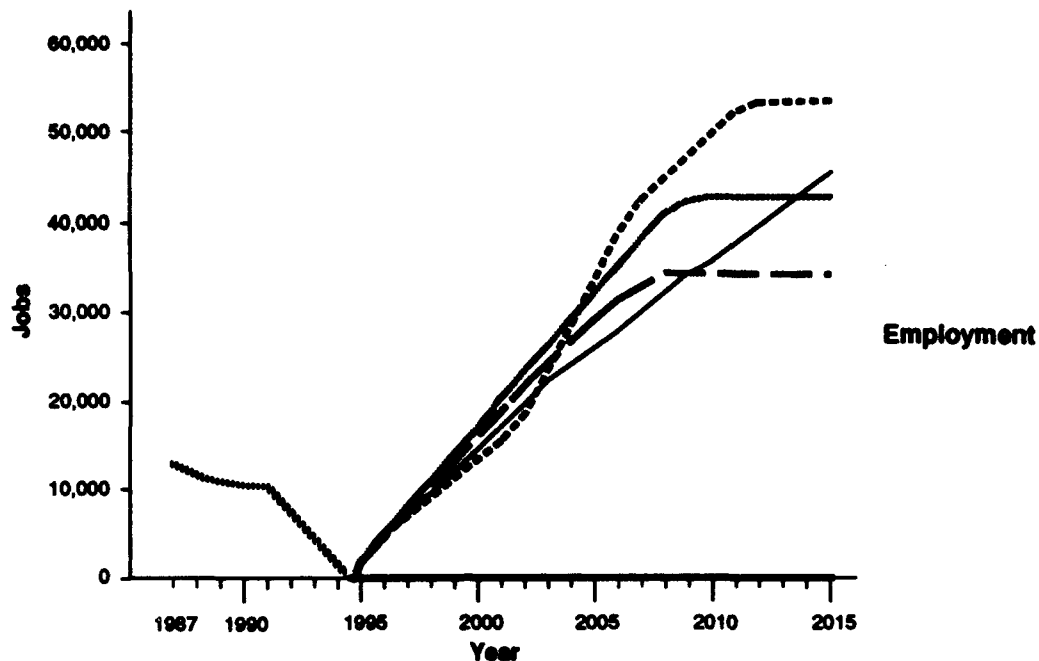
Under the Aircraft Maintenance Center Alternative, commercial airline service is not proposed as a potential reuse of the base. However, the existing airfield-related infrastructure would be used for aircraft maintenance activities. General aviation activities, as well as other commercial and industrial uses, would be similar in scope to the Proposed Action. In addition, aggregate mining activities would be allowed in phases in those areas of the base which would support this activity (see Section 1.4.3).

The Non-Aviation Alternative focuses primarily on the conversion of the base to mostly residential uses with supporting commercial, industrial, and recreational land uses (see Section 1.4.4).



The impacts of reuse on both the ROI and the Area of Concentrated Study (ACS) (i.e., those communities surrounding Norton AFB and defined as the cities of San Bernardino, Redlands, Highland, Loma Linda, and Colton) would vary with the reuse alternative developed. Figures S-1, S-2, and S-3 illustrate the projected profile of future employment and population within the ROI and ACS for each of the reuse alternatives.

- Under the Proposed Action, 30,264 direct jobs are projected by the year 2015, with an additional 22,962 secondary jobs. It is estimated that population in the ROI would increase in response to these employment opportunities by 34,289 by the year 2015. Fiscal shortfalls due to base closure would be reversed for most of the jurisdictions studied with the exception of local school districts where the loss of Public Law (P.L.) 81-874 funding would not be offset by increases in other revenue sources.
- The Airport with Mixed Use Alternative would have approximately three-fourths of the effects associated with the Proposed Action. This alternative would generate 22,780 direct and 19,944 secondary jobs by the year 2015. Population in the ROI is projected to increase in response to these employment opportunities by 26,276 by that same year. An estimated 2,112 persons would reside on-site in proposed housing by the year 2000. Similar to the Proposed Action, fiscal shortfalls would be reversed for most of the jurisdictions, although this would occur at a later date during the development process. Local school districts, however, would still find themselves in a deficit condition due to the loss of P.L. 81-874 program revenues.
- The Aircraft Maintenance Center Alternative would have approximately two-thirds of the effects associated with the Proposed Action. This alternative would generate 18,122 direct and 16,198 indirect jobs by the year 2015. Population in the ROI is projected to increase in response to these employment opportunities by 20,961 by that same year. An estimated 2,112 persons would reside in on-site proposed housing by the year 2000. Similar to the other alternatives, fiscal shortfalls would be reversed for most of the jurisdictions, although school districts would still find themselves in a deficit condition due to the loss of P.L. 81-874 program revenues.
- The Non-Aviation Alternative would generate 25,467 direct and 19,769 secondary jobs by the year 2015. Population in the ROI is projected to increase in response to these employment opportunities by 28,751 by that same year. It is estimated that more than 14,000 persons would reside in on-site proposed



#### EXPLANATION

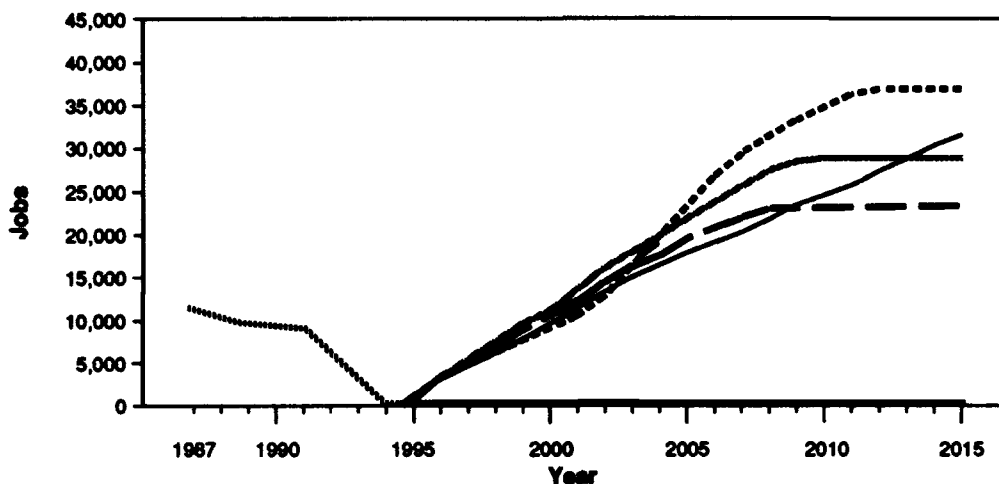
- Post-Closure/No-Action
- - - - - Proposed Action
- - - - - Airport with Mixed Use
- - - - - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

**Site-Related ROI  
Employment and  
Population Impacts-  
Proposed Action and  
Alternatives**

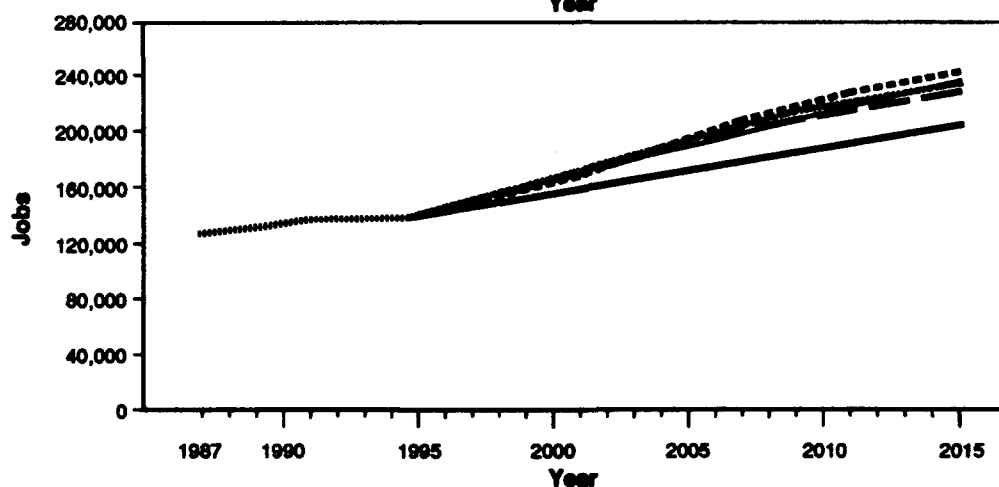
**Figure S-1**

ALTERNATIVE	Closure	2000	2006	2016
No-Action	62	62	62	62
Proposed Action	62	9,459	23,465	37,700
Airport with Mixed Use	62	11,525	21,901	28,944
Aircraft Maintenance Center	62	11,132	19,720	23,108
Non-Aviation	62	10,019	17,689	31,396

**ACS  
Employment  
Impacts**



**ACS  
Employment  
Impacts**



**Total ACS  
Employment  
with  
Employment  
Impacts of  
Alternatives**

#### EXPLANATION

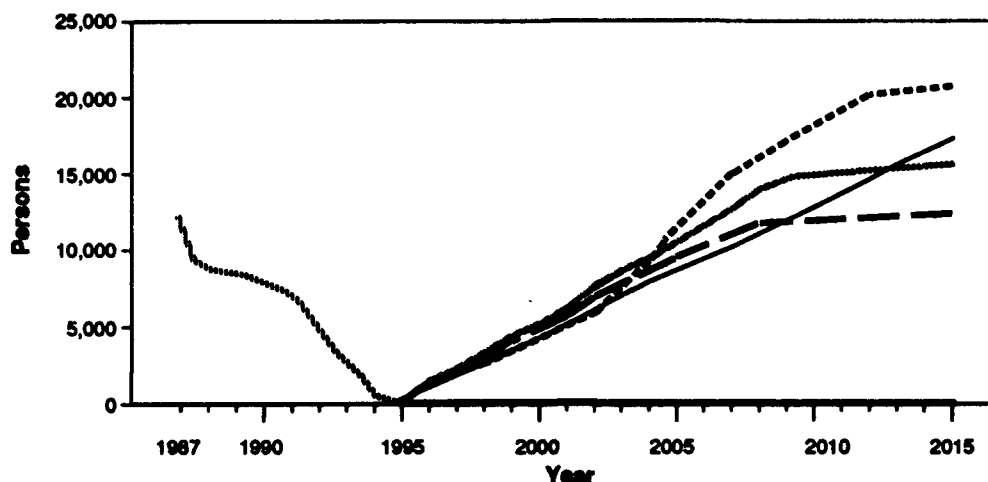
- Post-Closure/No-Action
- - - - - Proposed Action
- . - . - Airport with Mixed Use
- - - - - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

**Area of Concentrated  
Study (ACS) Total  
Employment and  
Employment Impacts-  
Proposed Action and  
Alternatives**

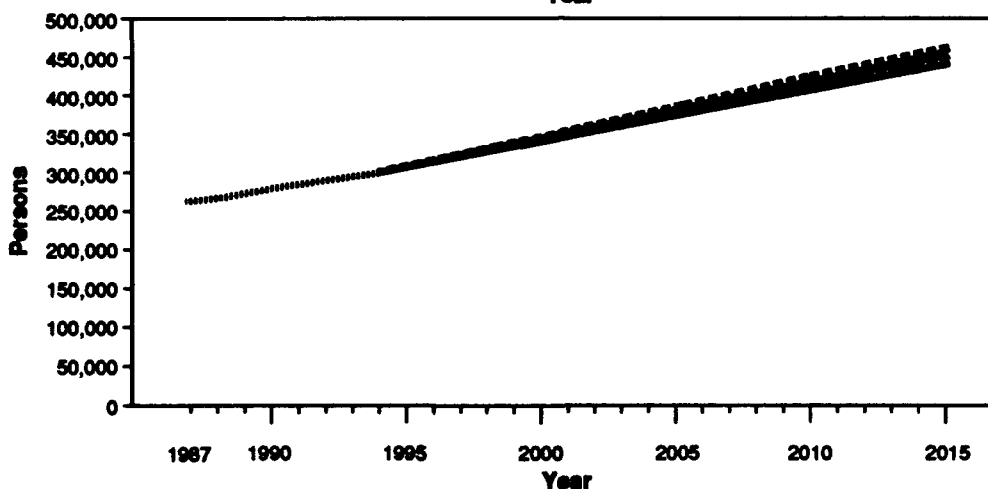
**Figure S-2**

ALTERNATIVE	Closure	2000	2005	2015
No-Action	0	0	0	0
Proposed Action	0	4,291	11,401	20,730
Airport with Mixed Use	0	5,313	10,763	15,709
Aircraft Maintenance Center	0	5,066	9,669	12,511
Non-Aviation	0	4,450	8,675	17,305

**ACS  
Population  
Impacts**



**ACS  
Population  
Impacts**



**Total ACS  
Population  
with  
Population  
Impacts of  
Alternatives**

#### EXPLANATION

- Post-Closure/No-Action
- - - - Proposed Action
- - - - Airport with Mixed Use
- - - - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure Population

**Area of Concentrated  
Study (ACS) Total  
Population and  
Population Impacts -  
Proposed Action and  
Alternatives**

**Figure S-3**

housing by the year 2015. Fiscal shortfalls would be reversed for most of the jurisdictions studied with the exception of local school districts where the loss of P.L. 81-874 funding would not be offset by increases in other revenue sources.

- Under the No-Action Alternative, the U.S. Government would retain ownership of the property after base closure. The BMO and military family housing uses would continue, but the remainder of the base would be put in caretaker status and minimally maintained. Existing leases, such as that with the Lockheed Corporation, would be terminated. A total of 50 direct jobs and 20 secondary jobs would be generated by these maintenance activities.

**THIS PAGE INTENTIONALLY LEFT BLANK**

## TABLE OF CONTENTS

	<u>Page</u>
<b>1.0 INTRODUCTION</b>	<b>1-1</b>
1.1 PURPOSE OF THE STUDY	1-1
1.2 CLOSURE OF NORTON AFB	1-2
1.3 PREVIOUS BASE CLOSURES	1-3
1.4 REUSE OPTIONS	1-5
1.4.1 Proposed Action	1-5
1.4.2 Airport with Mixed Use Alternative	1-8
1.4.3 Aircraft Maintenance Center Alternative	1-10
1.4.4 Non-Aviation Alternative	1-10
1.4.5 No-Action Alternative	1-10
1.4.6 Other Land Use Concepts	1-13
<b>2.0 COMMUNITY SETTING AND BASE PROFILE</b>	<b>2-1</b>
2.1 COMMUNITY SETTING	2-1
2.2 PRECLOSURE BASE PROFILE	2-6
2.2.1 Employment	2-6
2.2.2 Population and Housing	2-7
2.2.3 Payrolls	2-7
2.2.4 Expenditures	2-7
2.2.5 Educational Facilities	2-9
2.3 CLOSING BASE PROFILE	2-9
2.3.1 Closure Profile	2-9
2.3.2 Post-Closure (Caretaker Status)	2-10
<b>3.0 EVALUATION AND CHARACTERIZATION OF SOCIOECONOMIC RESOURCES</b>	<b>3-1</b>
3.1 REGION OF INFLUENCE AND AREAS OF CONCENTRATED STUDY	3-1
3.1.1 Economic Activity	3-4
3.1.2 Population	3-4
3.1.3 Housing	3-5
3.1.4 Public Services	3-5
3.1.5 Public Finance	3-5
3.1.6 Other Relevant Resources	3-5
3.2 DATA SOURCES	3-6
3.2.1 Economic Activity	3-6
3.2.2 Population	3-6
3.2.3 Housing	3-7
3.2.4 Public Services	3-7
3.2.5 Public Finance	3-8
3.2.6 Other Relevant Resources	3-8
3.3 METHODS	3-8
3.3.1 Economic Activity	3-9
3.3.2 Population	3-12
3.3.3 Housing	3-14
3.3.4 Public Services	3-14
3.3.5 Public Finance	3-16
3.3.6 Other Relevant Resources	3-19

# **TABLE OF CONTENTS** (continued)

	<u>Page</u>
<b>3.4</b>	<b>AFFECTED ENVIRONMENT . . . . . 3-24</b>
3.4.1	Economic Activity . . . . . 3-26
3.4.2	Population . . . . . 3-34
3.4.3	Housing . . . . . 3-35
3.4.4	Public Services . . . . . 3-40
3.4.4.1	Governmental Structure . . . . . 3-40
3.4.4.2	Public Education . . . . . 3-43
3.4.4.3	Police Protection . . . . . 3-48
3.4.4.4	Fire Protection . . . . . 3-51
3.4.4.5	Health Care . . . . . 3-54
3.4.5	Public Finance . . . . . 3-57
3.4.5.1	County of San Bernardino . . . . . 3-57
3.4.5.2	City of San Bernardino . . . . . 3-60
3.4.5.3	San Bernardino City Unified School District . . . . . 3-61
3.4.5.4	City of Redlands . . . . . 3-64
3.4.5.5	Redlands Unified School District . . . . . 3-66
3.4.5.6	City of Highland . . . . . 3-68
3.4.5.7	City of Loma Linda . . . . . 3-70
3.4.5.8	City of Colton . . . . . 3-71
3.4.6	Other Relevant Resources . . . . . 3-73
3.4.6.1	Transportation . . . . . 3-73
3.4.6.2	Utilities . . . . . 3-79
3.4.6.3	Airspace . . . . . 3-85
<b>4.0</b>	<b>SOCIOECONOMIC EFFECTS OF PROPOSED ACTION AND REUSE ALTERNATIVES . . 4-1</b>
4.1	ECONOMIC ACTIVITY . . . . . 4-2
4.1.1	Proposed Action . . . . . 4-2
4.1.2	Airport with Mixed Use Alternative . . . . . 4-4
4.1.3	Aircraft Maintenance Center Alternative . . . . . 4-4
4.1.4	Non-Aviation Alternative . . . . . 4-5
4.1.5	No-Action Alternative . . . . . 4-6
4.2	POPULATION . . . . . 4-7
4.2.1	Proposed Action . . . . . 4-8
4.2.2	Airport with Mixed Use Alternative . . . . . 4-10
4.2.3	Aircraft Maintenance Center Alternative . . . . . 4-11
4.2.4	Non-Aviation Alternative . . . . . 4-12
4.2.5	No-Action Alternative . . . . . 4-13
4.3	HOUSING . . . . . 4-14
4.3.1	Proposed Action . . . . . 4-14
4.3.2	Airport with Mixed Use Alternative . . . . . 4-15
4.3.3	Aircraft Maintenance Center Alternative . . . . . 4-16
4.3.4	Non-Aviation Alternative . . . . . 4-17
4.3.5	No-Action Alternative . . . . . 4-18



## TABLE OF CONTENTS

### (continued)

	<u>Page</u>
<b>4.4 PUBLIC SERVICES</b> .....	4-18
<b>4.4.1 Local Government</b> .....	4-19
4.4.1.1 Proposed Action .....	4-19
4.4.1.2 Airport with Mixed Use Alternative .....	4-20
4.4.1.3 Aircraft Maintenance Center Alternative .....	4-21
4.4.1.4 Non-Aviation Alternative .....	4-22
4.4.1.5 No-Action Alternative .....	4-23
<b>4.4.2 Public Education</b> .....	4-23
4.4.2.1 Proposed Action .....	4-23
4.4.2.2 Airport with Mixed Use Alternative .....	4-24
4.4.2.3 Aircraft Maintenance Center Alternative .....	4-25
4.4.2.4 Non-Aviation Alternative .....	4-26
4.4.2.5 No-Action Alternative .....	4-27
<b>4.4.3 Police Protection</b> .....	4-27
4.4.3.1 Proposed Action .....	4-28
4.4.3.2 Airport with Mixed Use Alternative .....	4-29
4.4.3.3 Aircraft Maintenance Center Alternative .....	4-29
4.4.3.4 Non-Aviation Alternative .....	4-30
4.4.3.5 No-Action Alternative .....	4-31
<b>4.4.4 Fire Protection</b> .....	4-31
4.4.4.1 Proposed Action .....	4-32
4.4.4.2 Airport with Mixed Use Alternative .....	4-33
4.4.4.3 Aircraft Maintenance Center Alternative .....	4-33
4.4.4.4 Non-Aviation Alternative .....	4-34
4.4.4.5 No-Action Alternative .....	4-35
<b>4.4.5 Health Care</b> .....	4-35
4.4.5.1 Proposed Action .....	4-35
4.4.5.2 Airport with Mixed Use Alternative .....	4-35
4.4.5.3 Aircraft Maintenance Center Alternative .....	4-36
4.4.5.4 Non-Aviation Alternative .....	4-36
4.4.5.5 No-Action Alternative .....	4-36
<b>4.5 PUBLIC FINANCE</b> .....	4-36
4.5.1 Proposed Action .....	4-36
4.5.2 Airport with Mixed Use Alternative .....	4-50
4.5.3 Aircraft Maintenance Center Alternative .....	4-54
4.5.4 Non-Aviation Alternative .....	4-58
4.5.5 No-Action Alternative .....	4-62
<b>4.6 OTHER RELEVANT RESOURCES</b> .....	4-62
<b>4.6.1 Transportation</b> .....	4-62
4.6.1.1 Proposed Action .....	4-64
4.6.1.2 Airport with Mixed Use Alternative .....	4-66
4.6.1.3 Aircraft Maintenance Center Alternative .....	4-67
4.6.1.4 Non-Aviation Alternative .....	4-69
4.6.1.5 No-Action Alternative .....	4-70
<b>4.6.2 Utilities</b> .....	4-70

# **TABLE OF CONTENTS** (continued)

	<u>Page</u>
4.6.2.1 Proposed Action .....	4-71
4.6.2.2 Airport with Mixed Use Alternative .....	4-71
4.6.2.3 Aircraft Maintenance Center Alternative .....	4-71
4.6.2.4 Non-Aviation Alternative .....	4-75
4.6.2.5 No-Action Alternative .....	4-75
4.6.3 Airspace .....	4-75
4.6.3.1 Proposed Action .....	4-77
4.6.3.2 Airport with Mixed Use Alternative .....	4-78
4.6.3.3 Aircraft Maintenance Center Alternative .....	4-78
4.6.3.4 Non-Aviation Alternative .....	4-78
4.6.3.5 No-Action Alternative .....	4-79
4.7 OTHER LAND USE CONCEPTS .....	4-79
5.0 COMPARATIVE ANALYSIS OF PROPOSED ACTION AND ALTERNATIVES .....	5-1
5.1 ECONOMIC ACTIVITY .....	5-1
5.2 POPULATION .....	5-4
5.3 HOUSING .....	5-4
5.4 PUBLIC SERVICES .....	5-5
5.5 PUBLIC FINANCE .....	5-6
5.6 OTHER RELEVANT RESOURCES .....	5-7
5.6.1 Transportation .....	5-7
5.6.2 Utilities .....	5-9
5.6.3 Airspace .....	5-9
6.0 REFERENCES .....	6-1
7.0 CONSULTATION AND COORDINATION .....	7-1
8.0 LIST OF PREPARERS AND CONTRIBUTORS .....	8-1

## LIST OF TABLES

	<u>Page</u>
1.4-1 Land Use Acreage by Alternative, Norton AFB .....	1-7
2.2-1 Norton AFB Employment .....	2-7
2.2-2 Military Population and Housing, Norton AFB .....	2-8
2.2-3 Norton AFB Payrolls (thousands of current year dollars) .....	2-8
2.2-4 Norton AFB Annual Expenditures (thousands of current year dollars) .....	2-9
3.1-1 Residential Locations of Norton AFB Military and Civilian Personnel by School District, Zip Codes, and County .....	3-2
3.3-1 Assumed Percentages of Population Relocation by Employment Category .....	3-11
3.3-2 Distribution of Workers Related to Norton AFB .....	3-13
3.3-3 Road Transportation Levels of Service .....	3-20
3.4-1 Impacts of Closure of Norton AFB .....	3-25
3.4-2 Summary of Economic Indicators, Riverside-San Bernardino Primary Metropolitan Statistical Area (PMSA) and United States .....	3-27
3.4-3 Site-Related Employment and Earnings Projections (in constant 1990 dollars) .....	3-30
3.4-4 Population Trends for San Bernardino and Riverside Counties: 1950-1990 .....	3-34
3.4-5 Population Trends for ACS Communities in the Norton AFB ROI .....	3-35
3.4-6 Site-Related Regional Population Projections .....	3-36
3.4-7 Housing Units and Vacancies for the Norton AFB ROI: 1980, 1990 .....	3-37
3.4-8 Housing Tenure, Median Value, and Median Contract Rent for the Norton AFB ROI: 1980, 1990 .....	3-38
3.4-9 Total Housing Units Authorized by Building Permits for Selected Portions of the Norton AFB ROI: 1980-1990 .....	3-39
3.4-10 Projected Site-Related Housing Demands, 1987 to Closure .....	3-39
3.4-11 Site-Related Local Government Employees, 1987 to Closure .....	3-43
3.4-12 Historic Fall Enrollments in Public School Districts in Norton AFB Area: 1980-1990 .....	3-44
3.4-13 Public School District Enrollments and Student-Teacher Ratios .....	3-44
3.4-14 Enrollments Related to Norton AFB: San Bernardino City Unified School District .....	3-46
3.4-15 Enrollments Related to Norton AFB: Redlands Unified School District .....	3-47
3.4-16 Site-Related Enrollments, 1987 to Closure .....	3-47
3.4-17 Site-Related School District Staff Employment, 1987 to Closure .....	3-48
3.4-18 Site-Related Police Officer Employment, 1987 to Closure .....	3-51
3.4-19 Site-Related Fire Fighter Employment, 1987 to Closure .....	3-54
3.4-20 San Bernardino County Revenues, Expenditures, and Fund Balances, General and Special Revenue Funds, FY 1988-1990 (thousands of current dollars) ..	3-58
3.4-21 Net Fiscal Effects of Closure of Norton AFB on Potentially Affected Local Government Units, FY 1990-1994 (thousands of 1990 dollars) .....	3-59
3.4-22 City of San Bernardino Revenues and Expenditures, General and Special Revenue Funds, FY 1988-1989 (current dollars) .....	3-60
3.4-23 San Bernardino City Unified School District, General Fund Revenues and Expenditures, FY 1988-1990 (current dollars) .....	3-62
3.4-24 City of Redlands Revenues, Expenditures, and Fund Balances, All Governmental Funds, FY 1988-1990 (current dollars) .....	3-65

# **LIST OF TABLES** (continued)

	<u>Page</u>
3.4-25 Redlands Unified School District, General Fund Revenues and Expenditures, FY 1988-1990 (thousands of current dollars) . . . . .	3-67
3.4-26 City of Highland Revenues and Expenditures, General and Special Revenue Funds, FY 1989-1990 (current dollars) . . . . .	3-69
3.4-27 City of Loma Linda Revenues and Expenditures, General and Special Revenue Funds, FY 1988-1990 (current dollars) . . . . .	3-71
3.4-28 City of Colton Governmental Funds, Revenues, and Expenditures FY 1988-1989 (current dollars) . . . . .	3-72
3.4-29 Preclosure and Closure Conditions on Key Roads . . . . .	3-77
3.4-30 Estimated Water Demand within the ACS (MGD) . . . . .	3-80
3.4-31 Estimated Wastewater Generation within the ACS (MGD) . . . . .	3-81
3.4-32 Estimated Solid Waste Disposal within the ACS (millions of cubic yards per year) . . . . .	3-83
3.4-33 Estimated Electrical Demand within the ACS (MWH/day) . . . . .	3-84
3.4-34 Estimated Natural Gas Demand within the ACS (thousands of therms/day) . . . . .	3-85
4.1-1 Site-Related Employment and Earnings Projections for the ROI and ACS - Proposed Action . . . . .	4-4
4.1-2 Site-Related Employment and Earnings Projections for the ROI and ACS - Airport with Mixed Use Alternative . . . . .	4-5
4.1-3 Site-Related Employment and Earnings Projections for the ROI and ACS - Aircraft Maintenance Center Alternative . . . . .	4-6
4.1-4 Site-Related Employment and Earnings Projections for the ROI and ACS - Non-Aviation Alternative . . . . .	4-7
4.2-1 Proposed Action: Total Regional Population Impacts - Counties and Selected Cities . . . . .	4-10
4.2-2 Airport with Mixed Use Alternative: Total Regional Population Impacts - Counties and Selected Cities . . . . .	4-11
4.2-3 Aircraft Maintenance Center Alternative: Total Regional Population Impacts - Counties and Selected Cities . . . . .	4-12
4.2-4 Non-Aviation Alternative: Total Regional Population Impacts - Counties and Selected Cities . . . . .	4-13
4.3-1 Proposed Action: Total Regional Housing Impacts - Counties and Selected Cities (Number of Housing Units) . . . . .	4-14
4.3-2 Airport with Mixed Use Alternative: Total Regional Housing Impacts - Counties and Selected Cities (Number of Housing Units) . . . . .	4-16
4.3-3 Aircraft Maintenance Center Alternative: Total Regional Housing Impacts - Counties and Selected Cities (Number of Housing Units) . . . . .	4-17
4.3-4 Non-Aviation Alternative: Total Regional Housing Impacts - Counties and Selected Cities (Number of Housing Units) . . . . .	4-18
4.4-1 Proposed Action: Total Government Employment Impacts . . . . .	4-20
4.4-2 Airport with Mixed Use Alternative: Total Government Employment Impacts . . . . .	4-21
4.4-3 Aircraft Maintenance Center Alternative: Total Government Employment Impacts . . . . .	4-22
4.4-4 Non-Aviation Alternative: Total Government Employment Impacts . . . . .	4-22

# **LIST OF TABLES** (continued)

	<u>Page</u>
4.4-5 Proposed Action: Total Enrollment Impacts . . . . .	4-24
4.4-6 Proposed Action: Total Teaching Staff Impacts . . . . .	4-24
4.4-7 Airport with Mixed Use Alternative: Total Enrollment Impacts . . . . .	4-25
4.4-8 Airport with Mixed Use Alternative: Total Teaching Staff Impacts . . . . .	4-25
4.4-9 Aircraft Maintenance Center Alternative: Total Enrollment Impacts . . . . .	4-26
4.4-10 Aircraft Maintenance Center Alternative: Total Teaching Staff Impacts . . . . .	4-26
4.4-11 Non-Aviation Alternative: Total Enrollment Impacts . . . . .	4-27
4.4-12 Non-Aviation Alternative: Total Teaching Staff Impacts . . . . .	4-27
4.4-13 Proposed Action: Total Police Protection Impacts (Number of Additional Sworn Officers) . . . . .	4-28
4.4-14 Airport with Mixed Use Alternative: Total Police Protection Impacts (Number of Additional Sworn Officers) . . . . .	4-29
4.4-15 Aircraft Maintenance Center Alternative: Total Police Protection Impacts (Number of Additional Sworn Officers) . . . . .	4-30
4.4-16 Non-Aviation Alternative: Total Police Protection Impacts (Number of Additional Sworn Officers) . . . . .	4-31
4.4-17 Proposed Action: Total Fire Protection Impacts (Number of Additional Fire Fighters) . . . . .	4-32
4.4-18 Airport with Mixed Use Alternative: Total Fire Protection Impacts (Number of Additional Fire Fighters) . . . . .	4-33
4.4-19 Aircraft Maintenance Center Alternative: Total Fire Protection Impacts (Number of Additional Fire Fighters) . . . . .	4-34
4.4-20 Non-Aviation Alternative: Total Fire Protection Impacts (Number of Additional Fire Fighters) . . . . .	4-34
4.6-1 Average Daily Trip Generation . . . . .	4-64
4.6-2 Utility Demand Changes in the ROI - Proposed Action . . . . .	4-72
4.6-3 Utility Demand Changes in the ROI - Airport with Mixed Use Alternative . . . . .	4-73
4.6-4 Utility Demand Changes in the ROI - Aircraft Maintenance Center Alternative . . . . .	4-75
4.6-5 Utility Demand Changes in the ROI - Non-Aviation Alternative . . . . .	4-76
4.7-1 Socioeconomic Impacts of Other Land Use Concepts . . . . .	4-81
5.1-1 Comparison of Reuse Alternatives . . . . .	5-2

## LIST OF FIGURES

	<u>Page</u>
1.3-1 Summary of Air Force Installation Closure and Reuse Actions Completed between 1961 and 1990 .....	1-4
1.4-1 Proposed Action - (Airport with Office/Industrial Park) .....	1-6
1.4-2 Airport with Mixed Use Alternative .....	1-9
1.4-3 Aircraft Maintenance Center Alternative .....	1-11
1.4-4 Non-Aviation Alternative .....	1-12
2.1-1 Socioeconomic Study Area Map .....	2-2
2.1-2 Area of Concentrated Study .....	2-3
3.1-1 School District Boundaries .....	3-3
3.4-1 Distribution of ROI Jobs by Major Industrial Sectors, 1988 .....	3-29
3.4-2 ROI Base-Related and Total ACS Employment Projections .....	3-33
3.4-3 Local Transportation System .....	3-74
4.1-1 ROI Employment Impacts - Proposed Action and Alternatives .....	4-3
4.2-1 ROI Population Impacts - Proposed Action and Alternatives .....	4-9
4.5-1 County of San Bernardino, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$) .....	4-37
4.5-2 City of San Bernardino, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$) .....	4-38
4.5-3 City of San Bernardino Unified School District, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$) .....	4-39
4.5-4 City of Redlands, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$) .....	4-40
4.5-5 Redlands Unified School District, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$) .....	4-41
4.5-6 City of Highland, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$) .....	4-42
4.5-7 City of Loma Linda, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$) .....	4-43
4.5-8 City of Colton, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$) .....	4-44

## **1.0 INTRODUCTION**

---

Chapter 1 presents the purpose of this study, briefly discusses the reason for and nature of the closure of Norton Air Force Base (AFB), reviews results of previous base closures, and defines the potential reuse alternatives in terms relevant to the analysis of socioeconomic impacts.

This report is organized to provide an assessment of the current socioeconomic characteristics and impacts of base operation; the post-closure conditions for activities related to the site assuming the base remains in caretaker status and is not redeveloped; and the impacts of alternative reuse scenarios on the region. The structure of the report is as follows:

- Chapter 2 provides the current community setting and profile of personnel, payrolls, and activities at the base.
- Chapter 3 establishes the projected post-closure conditions for the area after the base closes, assuming it remains in caretaker or "mothballed" status.
- Chapter 4 evaluates the impacts of alternative reuse plans and compares them to the projected post-closure condition.
- Chapter 5 compares the effects of the alternative reuse plans to each other.

### **1.1 PURPOSE OF THE STUDY**

*The Final Environmental Impact Statement (EIS) for the Closure of Norton Air Force Base, California* was released by the Air Force in July 1990 (U.S. Air Force, 1990a). That document evaluated environmental impacts expected to result from the closure. *The Final EIS for the Disposal and Reuse of Norton Air Force Base, California*, analyzes the environmental issues associated with disposal of the base and its reuse under a range of potential redevelopment plans.

The environmental documents were initiated to fulfill National Environmental Policy Act (NEPA) requirements which apply to federal actions, such as the decision of final disposition for Norton AFB property. Socioeconomic factors are addressed within the EIS from the perspective of their potential effect on the biophysical environment. For instance, changes in economic activity, particularly in regional spending and employment, may lead to changes in area population, public service demand, and vehicular traffic on the area's road network. These effects, in turn, have the potential for beneficial or

adverse environmental consequences on land use, air quality, water quality, noise, and biological and cultural resources.

The Socioeconomic Impact Analysis Study is not a NEPA document. It focuses on the socioeconomic effects resulting from the closure and potential reuse of Norton AFB. The scope of issues addressed includes economic activity, population, housing, public services, public finance, transportation, utilities, and airspace. These factors substantially influence the character of communities in the vicinity of the base, and are important to local residents. The analysis of these issues is intended to provide local planning officials with the necessary information with which to plan for changes at Norton AFB.

## **1.2 CLOSURE OF NORTON AFB**

It is the policy of the Department of Defense (DOD) to identify installations that are not essential to mission readiness plans or national security objectives. This policy, in conjunction with the fiscal prudence necessitated by provisions in the Gramm-Rudman-Hollings Act, has provided an opportunity to consider the downscaling and realignment of U.S. military forces (U.S. Air Force, 1990b).

The Defense Secretary's Commission on Base Realignment and Closure identified five active Air Force bases for closure, including Norton AFB (Defense Secretary's Commission on Base Realignment and Closure, 1988, pp. 74-79). The Secretary of Defense adopted in total, the Commission's recommendations on 5 January 1989 pursuant to the provisions of the Base Closure and Realignment Act of 1988 (Public Law [P.L.] 100-526).

Norton AFB is scheduled to be closed in March 1994. This action involves consolidation of Air Force activities with transfers of major assets and personnel to March AFB, California; McChord AFB, Washington; and Kirtland AFB, New Mexico (U.S. Department of Defense, 1988).

The Ballistic Missile Organization (BMO) will continue to operate from its present facilities at Norton AFB although it will be supported by March AFB support organizations. Norton AFB military family housing units will continue to be used by military personnel assigned to March AFB.

The projected post-closure conditions identified for this study occur once the base has gone into "caretaker status" after the phase-down of residual operations at the base and its subsequent closure. Caretaker status includes provision of security, minimal repair, and minor use to keep base facilities in "mothballed" condition.

Analysis of this projected post-closure scenario provides an assessment of near-term and long-term conditions in communities near the base with the



base no longer in operation. This post-closure condition then provides a benchmark for comparison of the socioeconomic consequences of alternative reuse plans.

### **1.3 PREVIOUS BASE CLOSURES**

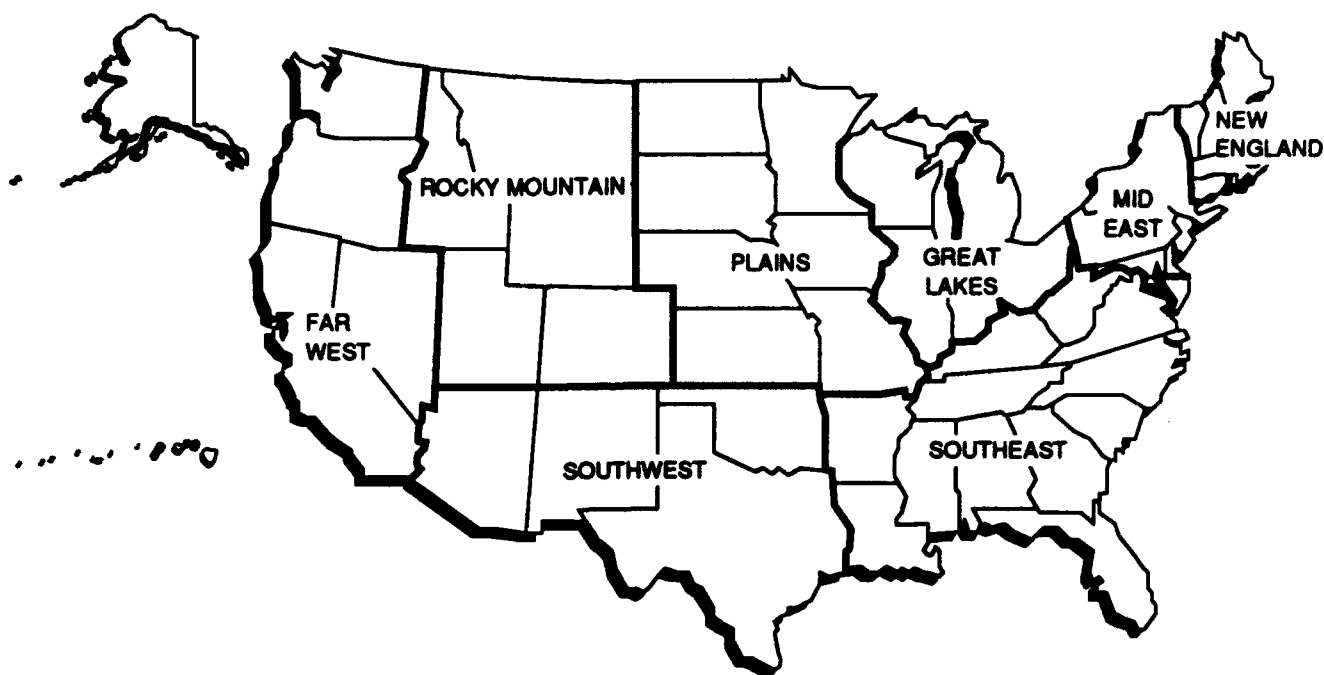
Because of the potential for severing long-standing social and economic relationships, base closures can be a very disrupting experience for host communities. The future state of the local economy is always of concern, although many communities affected by base closures have successfully implemented installation reuse plans. A recent study completed by the President's Economic Adjustment Committee indicates that opportunities exist for successful conversion of military installations to civilian use (U.S. Department of Defense, 1990).

After reviewing the experiences of nearly 100 communities that lost a local military base between 1961 and 1990, the committee made several important findings:

- Military jobs that were transferred out of the local communities numbered almost 138,000. These transfers represented permanent, long-term reductions in the economic base of the communities.
- Conversion to civilian use led to a total of 158,000 direct jobs, more than replacing the 93,000 DOD civilian and contractor jobs lost due to the closing.
- Fifty-seven former bases became the seat of a number of 4-year colleges, community colleges, and post-secondary vocational-technical programs. In 1990, these schools accommodated 73,000 college students, 25,000 secondary vocational-technical students, and 62,000 trainees.
- Seventy-five former bases are host to industrial parks or plants, and 42 established municipal or general aviation airports.

The conclusion of the study was that in the short term, closure can have substantial negative effects on the local economy. This difficult transition period generally lasts 3 to 5 years (U.S. Department of Defense, 1990).

Figure 1.3-1 provides employment statistics for 44 Air Force installation closure and reuse actions completed between 1961 and 1990. These Air Force actions resulted in transfer of approximately 93,500 military personnel. About 17,000 on-base civilian jobs were lost in these actions. Nearly 63,200 civilian jobs were gained due to reuse of the sites. Considering individual installations, in most cases the number of civilian jobs in 1990 was greater than when the base was under military control. In only



REGION	No. of Bases Closed	Military Jobs Transferred	Civilian Jobs Lost	New Civilian Jobs on Base
1. New England	5	11,241	921	9,947
2. Mid East	3	4,064	11,085	4,298
3. Great Lakes	6	7,505	2,453	10,380
4. Plains	7	18,502	3,129	9,530
5. Southeast	10	22,103	3,349	20,252
6. Southwest	9	24,472	6,058	10,942
7. Rocky Mountain*	3	3,663	336	307
8. Far West	5	8,539	1,093	4,421
Total	48	100,179	28,424	70,077

\* Data for one AFB not available.

Source: U.S. Department of Defense, 1990.

### Summary of Air Force Installation Closure and Reuse Actions Completed between 1961 and 1990

Figure 1.3-1

about 20 percent of the cases, however, does the number of new civilian jobs exceed the number of both civilian and military jobs lost as a result of base closure.

## **1.4 REUSE OPTIONS**

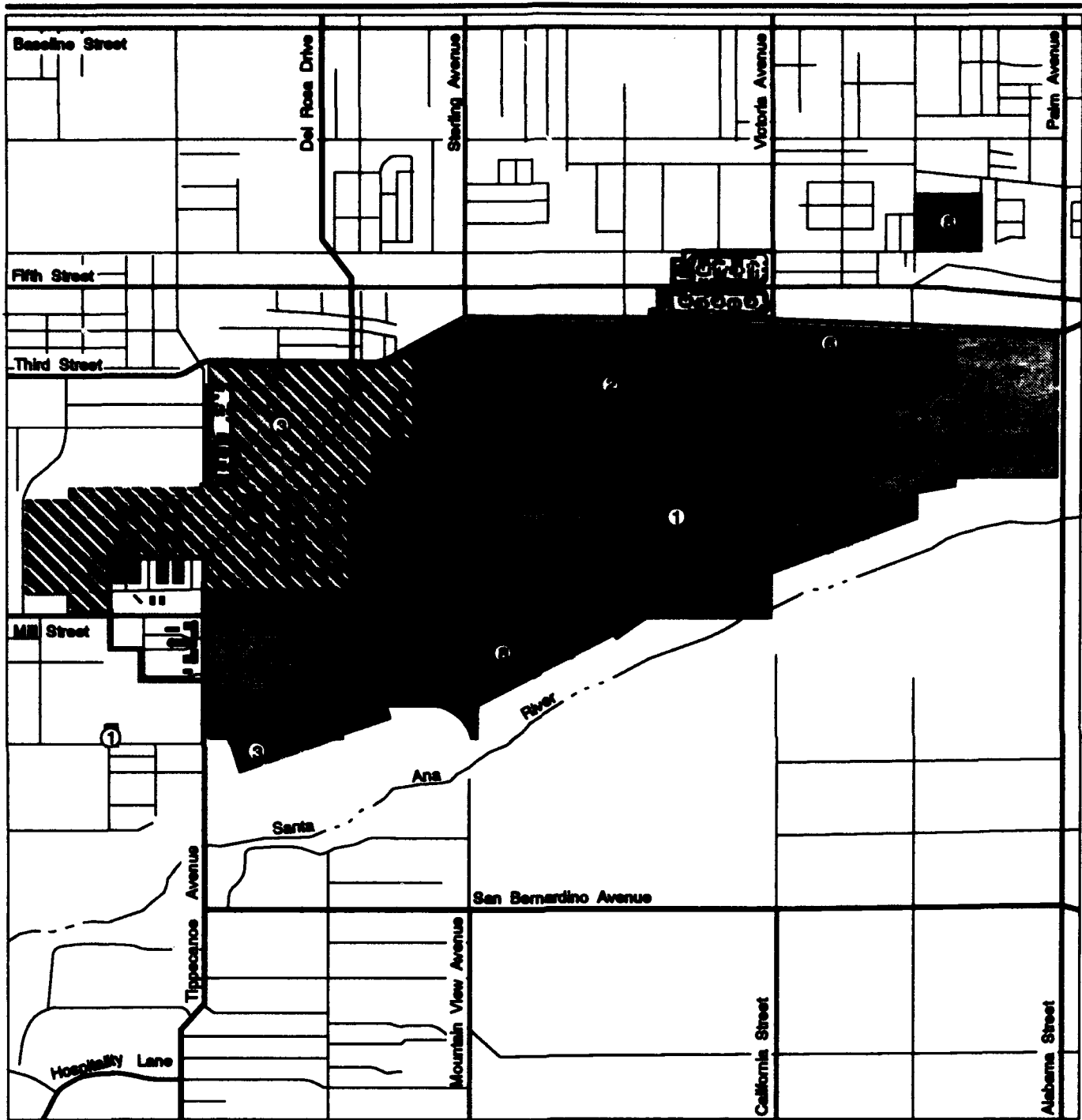
To help identify potential socioeconomic impacts associated with the disposal of Norton AFB, this study addresses a range of reasonable reuse alternatives. The Air Force has adopted the redevelopment plans developed by the Inland Valley Development Agency (IVDA) as the Proposed Action for the purpose of conducting the required analysis. In addition, the Air Force has also analyzed the impacts associated with other reasonable reuse alternatives. These include two aviation reuse proposals, a non-aviation reuse, and a no-action alternative that involves no reuse. Actual decisions on reuse of the property will be made by its recipients subsequent to conveyance.

The Proposed Action for reuse of Norton AFB is the Airport with Office/Industrial Park (OIP) plan which is based on the reuse plan developed by the IVDA; it is discussed in Section 1.4.1. The Airport with Mixed Use Alternative is an aviation reuse alternative and is discussed in Section 1.4.2; the Aircraft Maintenance Center Alternative is another aviation reuse alternative and is discussed in Section 1.4.3; and the Non-Aviation Alternative is discussed in Section 1.4.4. Under the No-Action Alternative the Air Force would retain ownership of the base after closure. This alternative is discussed in Section 1.4.5. Under the No-Action Alternative, caretaker services would be provided to assure base security and to maintain the grounds and existing facilities and infrastructure. Since the decision to close the base has already been made, caretaker status is considered to represent post-closure conditions.

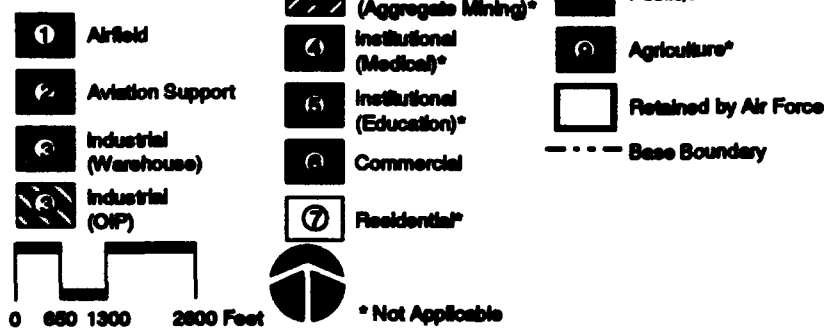
### **1.4.1 Proposed Action**

The Proposed Action for base reuse utilizes the existing airfield at Norton AFB and includes several aviation and non-aviation-related uses. Table 1.4-1 lists the proposed reuse activities by type of use and the proposed acreage of each use (reported acreages throughout this document are approximate). The main components of the Proposed Action (approximately 1,256 acres of a total of 2,127 acres) involve an airfield and aviation-related uses such as aviation-support activities, general aviation passenger service, air cargo, and aircraft maintenance operations. Other components include office, commercial, and industrial parks; a golf course; and recreation and undeveloped areas (Figure 1.4-1).

**Airfield.** Under the Proposed Action, the existing runway would be reused. The airfield would comprise approximately 729 acres. Most navigational aids are already in place. Specific improvements required to meet Federal



# EXPLANATION



## Proposed Action- (Airport with Office/Industrial Park)

Figure 1.4-1

**Table 1.4-1. Land Use Acreage by Alternative, Norton AFB**

<b>Land Use</b>	<b>Proposed Action</b>	<b>Airport with Mixed Use Alternative</b>	<b>Aircraft Maintenance Center Alternative</b>	<b>Non-Aviation Alternative</b>
<b>Airfield</b>	<b>729</b>	<b>729</b>	<b>587</b>	<b>-</b>
<b>Aviation Support</b>	<b>527</b>	<b>434</b>	<b>339</b>	<b>-</b>
<b>Industrial (Warehouse)</b>	<b>14</b>	<b>135</b>	<b>135</b>	<b>135</b>
<b>Office/Industrial Park</b>	<b>372</b>	<b>259</b>	<b>189</b>	<b>366</b>
<b>Institutional (Medical/Education)</b>	<b>-</b>	<b>8</b>	<b>8</b>	<b>8</b>
<b>Commercial</b>	<b>66</b>	<b>57</b>	<b>55</b>	<b>63</b>
<b>Residential</b>	<b>-</b>	<b>61</b>	<b>61</b>	<b>1,119</b>
<b>Public/Recreation</b>	<b>273</b>	<b>298</b>	<b>298</b>	<b>290</b>
<b>Aggregate Mining</b>	<b>-</b>	<b>-</b>	<b>309</b>	<b>-</b>
<b>Air Force Retained</b>	<b>146</b>	<b>146</b>	<b>146</b>	<b>146</b>
<b>Total</b>	<b>2,127</b>	<b>2,127</b>	<b>2,127</b>	<b>2,127</b>

Aviation Administration (FAA) requirements would be determined in detail as the types of aircraft and operations planned for the airport are further defined.

**Aviation Support.** Aviation support would require about 527 acres of land comprising aviation support areas and supporting lands and facilities necessary for operation of an economically viable civilian commercial airport. The support areas include an air passenger terminal, general aviation, aviation training, and aviation industrial service areas such as aircraft maintenance facilities. Current plans call for near-term reuse of existing facilities, including the existing passenger terminal. Long-range plans involve eventual construction of a new passenger terminal and replacement of some facilities and infrastructure. A portion of one of the hangars on base is leased to the IVDA, which in turn subleases it to the Lockheed Corporation. Aircraft maintenance functions are likely to include FAA-mandated modifications and major repairs similar to activities currently performed on base under an interim lease. Activities could be in place shortly after base closure. The IVDA's current lease expires in July 1993.

**Industrial Warehouse.** Industrial warehouse uses would be developed within 14 acres if vacant land located in the southwestern portion of the base.

Development would occur within the first 5 years of reuse and could generate about 195,000 square feet of new facility floor space.

**Office/Industrial Park.** Approximately 372 acres of the existing western portion of the base are designated under this plan for use as an OIP. Under this alternative, most existing structures and infrastructure on this portion of the base would be demolished or substantially modified and redeveloped as an OIP complex.

**Commercial.** The reuse plan calls for 66 acres and is expected to include services compatible with airport activities. All existing buildings and infrastructure would be removed and replaced with new development.

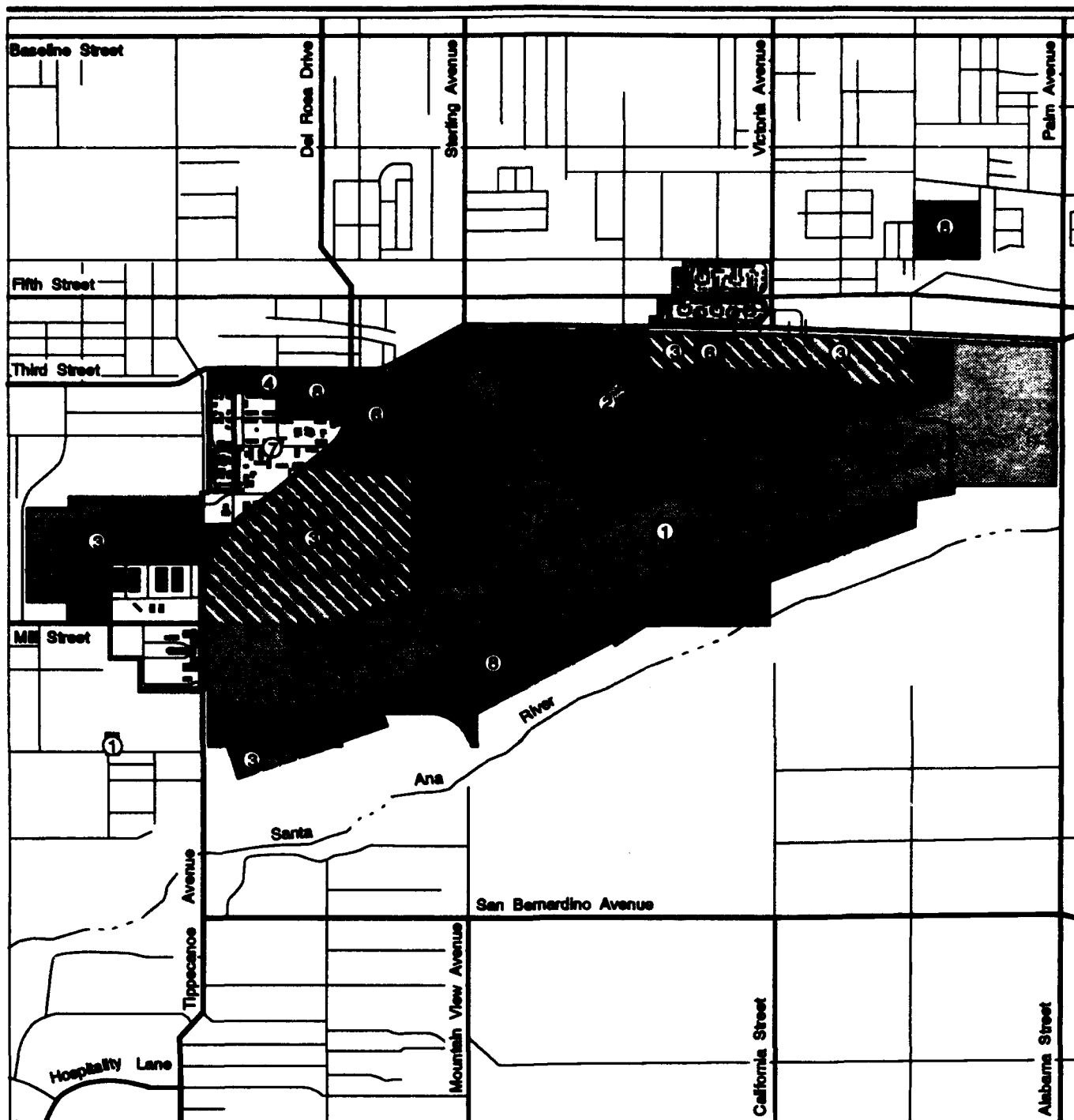
**Public/Recreation.** The 18-hole golf course would occupy 148 acres of land on the southern edge of the base property. Relocation of four holes and associated fairways would be required to avoid safety hazards in the runway clear zones. East of the golf course, a 95-acre area south of the runway would be retained as undisturbed open area.

The city of Highland is also requesting a portion of a noncontiguous 30-acre parcel for recreational development.

**Air Force Retained.** The disposal of Norton AFB does not include the properties required to support the BMO or the noncommissioned officer (NCO) and officer family housing units. The area retained for BMO and associated units totals 74 acres in the southwest portion of the base. The residential areas (72 acres) include 264 family units. The residential areas are located in the northwest corner of the base (25 acres), and in an area just north of Third Street (47 acres) at Victoria Avenue. These units will provide satellite housing for use by personnel assigned to March AFB.

#### **1.4.2 Airport with Mixed Use Alternative**

This alternative varies from the Proposed Action by retaining and using more of the existing base facilities. It is similar to the Proposed Action in the reuse of the base airfield and aviation facilities, but it does not involve as extensive demolition and construction of new facilities over the remainder of the base as the Proposed Action. This alternative also includes residential, institutional (medical), and recreational areas in the northwest portion of the base. Areas contiguous to the BMO complex would be used for warehousing and industrial activities. The retention of a residential area and the existing land uses in the northwest area are the primary land use differences between this alternative and the Proposed Action, which involves replacing the existing facilities with office/industrial uses (Figure 1.4-2). Table 1.4-1 indicates acreages of land-use types under this alternative.



# EXPLANATION



## Airport with Mixed Use Alternative

Figure 1.4-2

### **1.4.3 Aircraft Maintenance Center Alternative**

This alternative centers around aviation-related industrial use, specifically aircraft maintenance activities that need access to a functional airfield. The airport would also support general aviation, but no commercial passenger service is included in this alternative. Land uses in the western portion of the base would be similar to the Airport with Mixed Use Alternative, but the area northeast of the airfield would be used for aggregate mining. The 30-acre parcel in Highland would be used for recreation, as in the Proposed Action and Airport with Mixed Use Alternative (Figure 1.4-3). Table 1.4-1 indicates acreages of land-use types under this alternative.

### **1.4.4 Non-Aviation Alternative**

Under this alternative, Norton AFB reuse will not have an aviation component; all land-use activities are non-aviation oriented. The land uses incorporated in this alternative include residential and industrial uses, with some neighborhood-type commercial facilities supporting the residential areas (Figure 1.4-4). The 30-acre parcel in Highland, which is currently surrounded by residential land use, is designated as residential in this alternative; Table 1.4-1 indicates acreages of land-use types under this alternative.

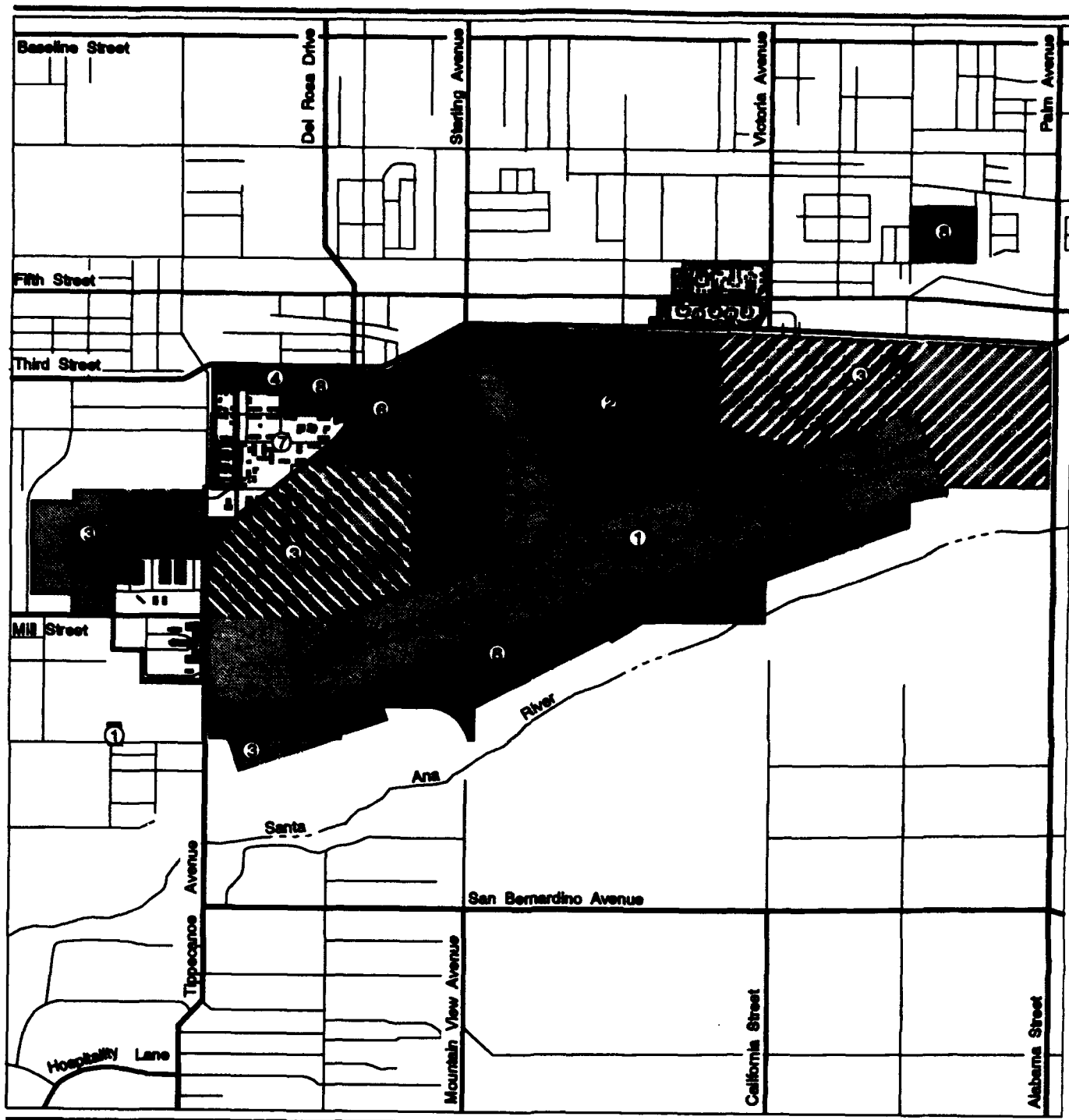
### **1.4.5 No-Action Alternative**

The No-Action Alternative would result in the U.S. Government retaining ownership of the property after base closure. The BMO and military family housing uses would continue, but the remainder of the base would not be put to further use. The base would be preserved, i.e., placed in a condition intended to minimize deterioration and ensure base security and maintain the grounds and physical assets, including the existing utilities and structures.

The future levels of maintenance would be as follows:

- Maintain structures in mothballed condition. This would involve disconnecting or draining all utility lines and securing facilities.
- Isolate or deactivate utility distribution lines on base.
- Provide minimal maintenance of roads to ensure access.
- Provide minimal grounds maintenance of open areas. This would primarily consist of infrequent cutting to eliminate fire, health, and safety hazards.





# EXPLANATION



Airfield



Aviation Support



Industrial (Warehouse)



Industrial (OIP)



Industrial (Aggregate Mining)



Institutional (Medical)



Institutional (Education)\*



Commercial



Residential



Public/Recreation



Agriculture\*



Retained by Air Force

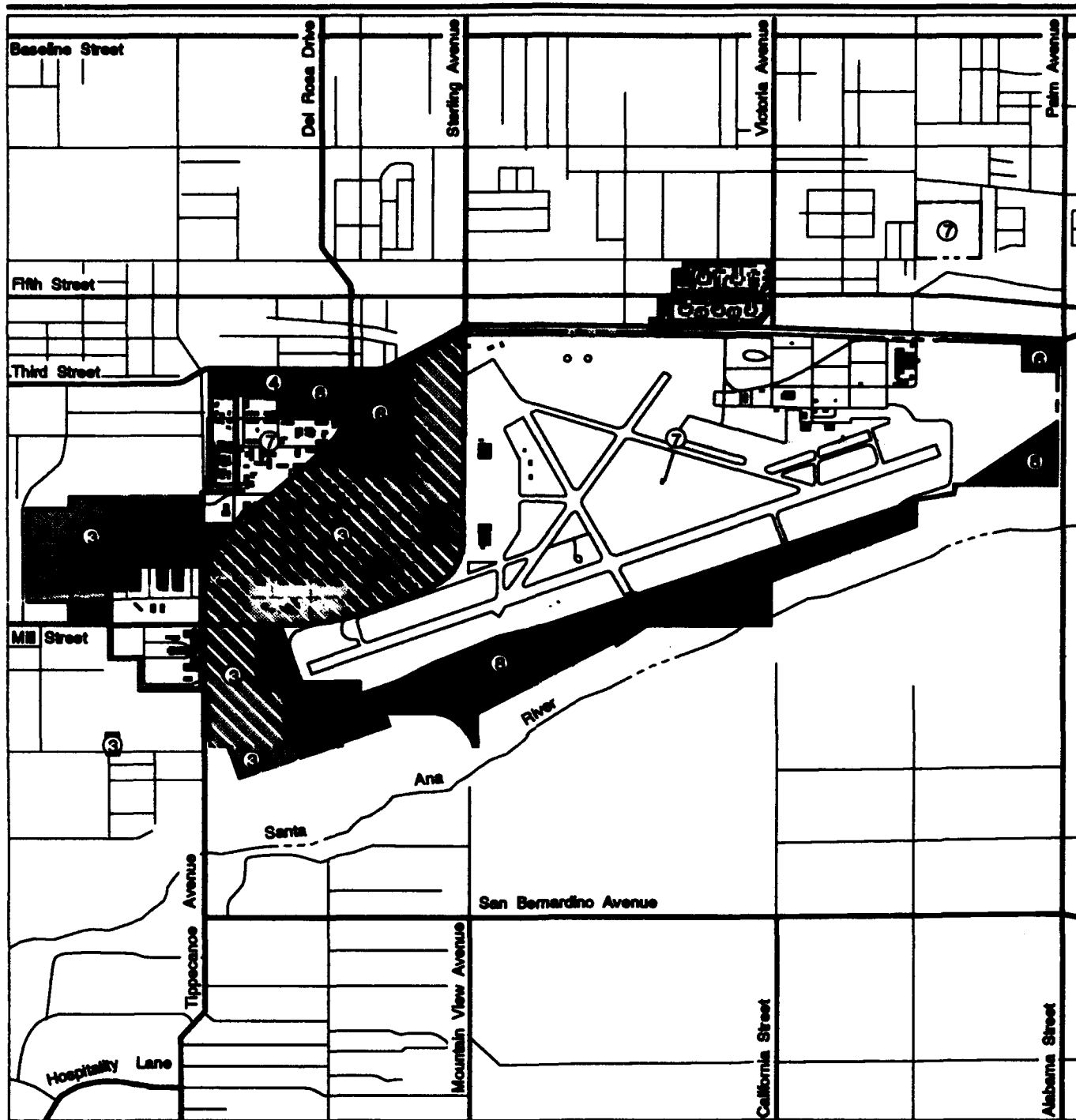
--- Base Boundary



\* Not Applicable

## Aircraft Maintenance Center Alternative

Figure 1.4-3



# EXPLANATION

- ① Airfield\*
- ② Aviation Support\*
- ③ Industrial (Warehouse)
- ④ Industrial (OIF)

- ⑤ Industrial (Aggregate Mining)\*
- ⑥ Institutional (Medical)
- ⑦ Institutional (Education)\*
- ⑧ Commercial
- ⑨ Residential

- ⑩ Public/Recreation
- ⑪ Agriculture\*
- ⑫ Retained by Air Force
- Base Boundary



\* Not Applicable

## Non-Aviation Alternative

Figure 1.4-4

- Maintain golf course in such a manner as to facilitate economical resumption of use.
- Terminate all interim leases.

A disposal management team (DMT) will be established at Norton AFB. The responsibilities of this team include coordinating closure activities, establishing a caretaker force to maintain Air Force properties after closure, and serving as the Air Force liaison supporting community reuse. For the purposes of environmental analysis, it was assumed that this team would be comprised of approximately 50 people at the time of closure.

#### **1.4.6 Other Land Use Concepts**

This section describes proposed federal property transfers, as well as other government transfers and independent land use concepts. These property transfers and conveyances are not part of any integrated reuse option, and would be initiated on an individual basis; thus, they are excluded from the impact analysis. They are independent of one another and could be implemented individually or in combination with a modified reuse alternative.

In compliance with the Federal Property and Administrative Services Act of 1949, the Air Force solicited proposals from other federal agencies regarding their interest in acquiring any lands or facilities identified for disposal at Norton AFB. Responses include several proposals for direct federal use, as well as sponsorship of local governmental programs eligible for public benefit transfer, each of which is described below.

**U.S. Department of Interior.** The U.S. Department of Interior, National Park Service is sponsoring requests by the city and county of San Bernardino for conveyance of all base recreational facilities for use as public park facilities. This includes the golf course, gymnasium, recreation center, outdoor sports complex, bowling center, and family campground. The National Park Service is also supporting the city of Highland's request for conveyance of a portion of the 30-acre parcel to the city for a municipal park. It has been assumed that 140 jobs would be created to maintain and manage these public areas.

**U.S. Department of Agriculture.** The U.S. Department of Agriculture, Forest Service (USFS) has entered a request for the use of several facilities and/or vacant land for the San Bernardino Forest Supervisor's Office, for FIRESCOPE, a joint-use program involving the USFS, California Forestry and Fire Protection, Governor's Office of Emergency Services, and other agencies. The proposal calls for administrative, warehouse, and aviation support facilities to consolidate and augment activities currently located throughout southern California into a southern California coordination and support facility. The request identifies 67,000 square feet of office facility,

180,000 square feet of parking, 80,000 square feet of warehouse storage and open storage, a hangar, an operations apron, and 10 acres of aircraft parking. The aviation support requirements would be contingent on continued operation of the base airfield. If the Non-Aviation Alternative were selected for the base, USFS would still be interested in the office, vehicle parking, warehouse, and open storage. While it would be advantageous to consolidate all of the operations at one location, this is not essential.

Three potential locations for these facilities have been identified. One location is along the east apron. The site is undeveloped and would require the construction of office and warehouse facilities. Land near the airfield would serve the aviation needs. The second potential location would be on the west side of the airfield near the existing passenger terminal. Existing buildings would be converted to office and warehouse facilities, and the land near the airfield would serve the aviation needs. The third potential location is an existing warehouse (Building 942) and adjacent land for open storage and parking. This would serve warehouse and storage needs only. This site also includes an existing office (Building S-2) which would serve as office space for the San Bernardino National Forest Supervisor's Office only. Construction of additional office space would be required. Aircraft parking space for the third site could be accommodated at the apron areas located in the previously mentioned site locations.

Aviation operations would involve two heavy tankers (C-130, P-3), two light air tankers (S-2), and other light aircraft (A-100). The base of operations would support fire fighting and emergency response mobilizations, involving transport of up to 5,000 people within a 24-hour period, with hourly rotation. Routine (non-emergency) operations would average one flight per day during summer months, with training flights once per month. For the purpose of analysis it has been assumed that this proposal would generate about 150 jobs.

**U.S. Department of Education.** The U.S. Department of Education has identified four educational organizations interested in facilities at Norton AFB: the California State University system, San Bernardino County Schools, Northrop University, and the San Bernardino Community College District. The only specific proposal received is for 80,000 square feet of hangar space with runway access, classroom, laboratory, and office space for aviation training. For the purposes of this analysis, it has been assumed that about 250 jobs and approximately 750 students would be associated with these educational uses.

**U.S. Department of Veterans Affairs.** The U.S. Department of Veterans Affairs (VA) has requested transfer of the existing clinic and supporting facilities, two to four dormitories for use as research offices as well as in-patient psychiatric and substance abuse patients, and warehouse

facilities. In addition, the VA is interested in access to recreational facilities available for public use, including the gymnasium, recreation center, bowling alley, and swimming pools. The VA's proposal does not include actual acquisition of those recreation facilities. This proposal would generate 140 direct VA jobs.

**McKinney Act.** As part of the McKinney Act of 1987 (P. L. 100-77), the U.S. Department of Housing and Urban Development (HUD) evaluates surplus government buildings and properties for suitability as housing for the homeless. If suitable, and there is a need, these properties can then be made available to homeless providers through the Department of Health and Human Services. This assessment has not been performed at Norton AFB. There are several potential locations within the base property that could support the needs for homeless housing and support facilities. However, for the purposes of analysis, existing dormitories in the northwest portion of Norton AFB were identified as having potential to provide low income housing or housing for the homeless. Dormitories could be occupied soon after base closure. In the analysis, it is assumed that at least one dormitory could be designated for housing of homeless persons.

**U.S. Postal Service.** The U.S. Postal Service has requested 20,000 square feet of office space, 95,000 square feet of warehouse, parking space for 200 employees, and adequate dock, parking, and maneuvering area for semi-trailer vehicles. These facilities would be used to establish administrative and storage facilities on base property. The complex would employ about 400 to 500 personnel over multiple shifts. The operation is estimated to generate 80 to 100 arrivals and departures per day.

**San Bernardino County.** A proposal submitted by the County of San Bernardino Work Furlough Program, addresses reuse of a limited portion of Norton AFB. The county Adult Correction Advisory Council has requested use of dormitories, associated dayrooms, and classroom space on base for a 210-bed work furlough facility. The purpose of the facility would be to house low-risk offenders who are employed in the community for the duration of their sentences. These inmates would live under minimum security conditions that would include monitoring, but no fencing. During the day, 90 percent of the inmates would leave the facility to go to their jobs. In addition to lodging, the inmates would receive counseling at the facility during nonworking hours. Based on a similar facility in San Diego, the program would employ approximately 25 personnel. The requestor has specified the use of Buildings 503, 504, or 517.

**Aggregate Mining.** This concept has been developed in response to a proposal by a local aggregate mining firm to mine aggregate in portions of the base property, primarily located in the extreme eastern part of the base. The suitable area for such an overlay differs slightly between the aviation alternatives and the Non-Aviation Alternative. Approximately 140 acres

have been identified in combination with the Proposed Action and the Airport with Mixed-use Alternative. Approximately 300 acres have been identified in combination with the Non-Aviation Alternative. Mining operations would employ about 55 personnel. Aggregate mining is already included as part of the Aircraft Maintenance Center Alternative.

## **2.0 COMMUNITY SETTING AND BASE PROFILE**

---

This chapter describes the community setting and Norton AFB activity and program levels prior to and following the closure announcement as reflected in the base's Economic Resource Impact Statements (ERIS) for fiscal years (FYs) 1987 through 1990. (The federal government's FY spans the period October through September.)

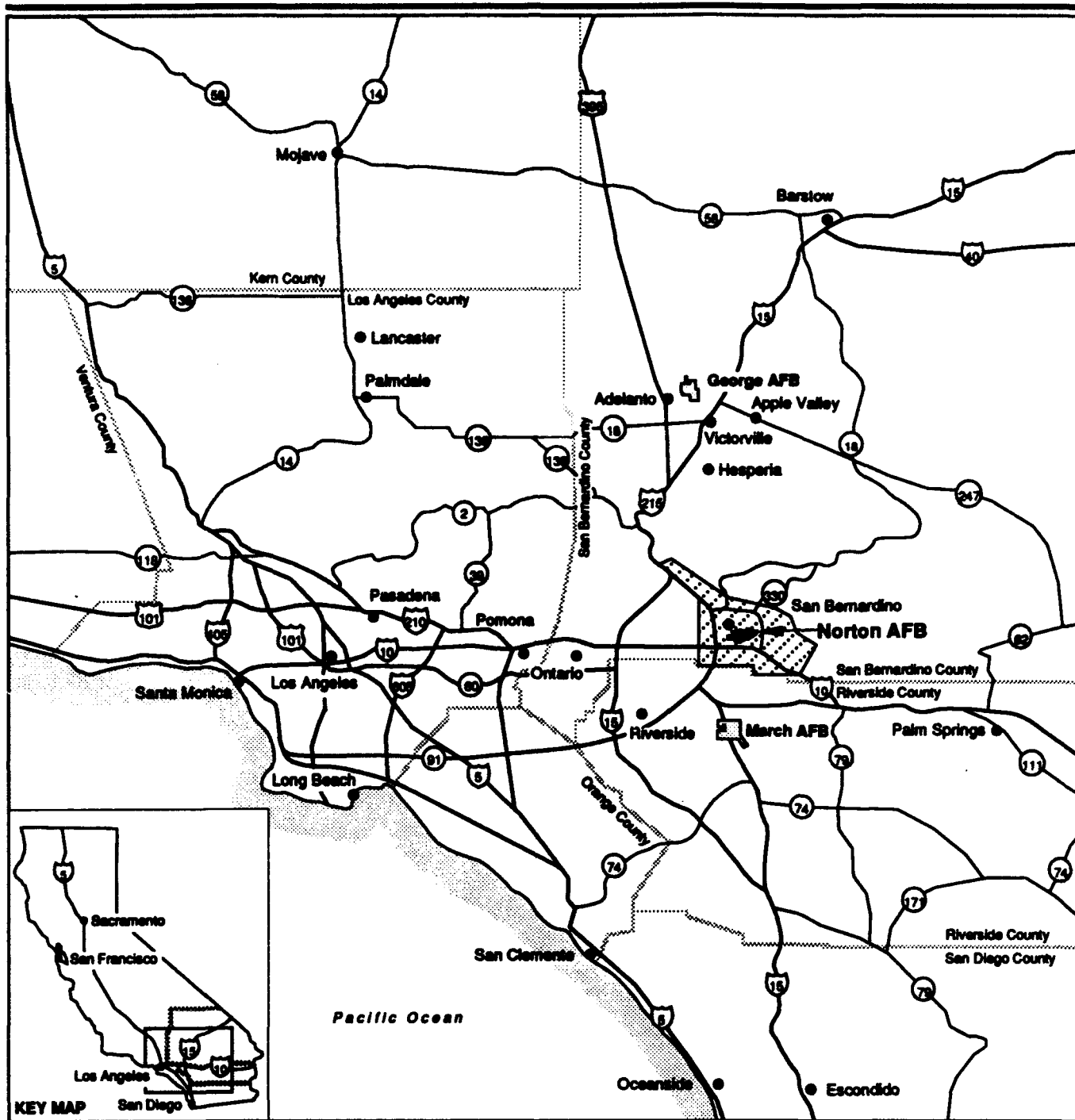
### **2.1 COMMUNITY SETTING**

Norton AFB, established originally as the San Bernardino Air Depot in 1941, is located in southwestern San Bernardino County (Figure 2.1-1). Occupying 2,127 acres, the base is within the city limits of San Bernardino, excluding a 30-acre parcel in the city of Highland (Figure 2.1-2). The area surrounding the base is mostly urbanized. Relatively low home prices compared to other southern California communities, along with its commuting proximity to the urban centers of Los Angeles and Orange counties, have made this area one of the fastest growing regions in the country. The internationally known attractions associated with greater southern California, such as beaches, summer and winter mountain resorts, amusement parks, theaters, and cultural sites, are all within 100 miles of the base.





Considering both the residential locations of Norton AFB personnel and economic interactions in the region, San Bernardino and Riverside counties comprise the overall region of influence (ROI). Within this region, the communities most affected by base activities would be the communities of San Bernardino, Redlands, Highland, Loma Linda, and Colton. Over 70 percent of current Norton AFB personnel reside within these communities. These communities also could expect the greatest impacts under any of the base reuse proposals, and thus comprise the area of concentrated study (ACS). The remaining base personnel are distributed among numerous other communities in the ROI. However, the portion of the resident population in these communities which is base personnel is relatively small, and these communities are not expected to be affected to a large degree by changes at Norton AFB. For example less than 1 percent of base personnel reside in the city of Grand Terrace.

#### **Economic Activity**

San Bernardino and Riverside counties are among the fastest growing areas in the nation. Economic growth in these counties is heavily influenced by the eastward expansion of manufacturing, services, and construction activities in the Los Angeles basin. Both of these counties are anticipated to continue to grow at a relatively rapid pace through the next two decades. A good deal of this growth is expected to be concentrated in the major



#### EXPLANATION

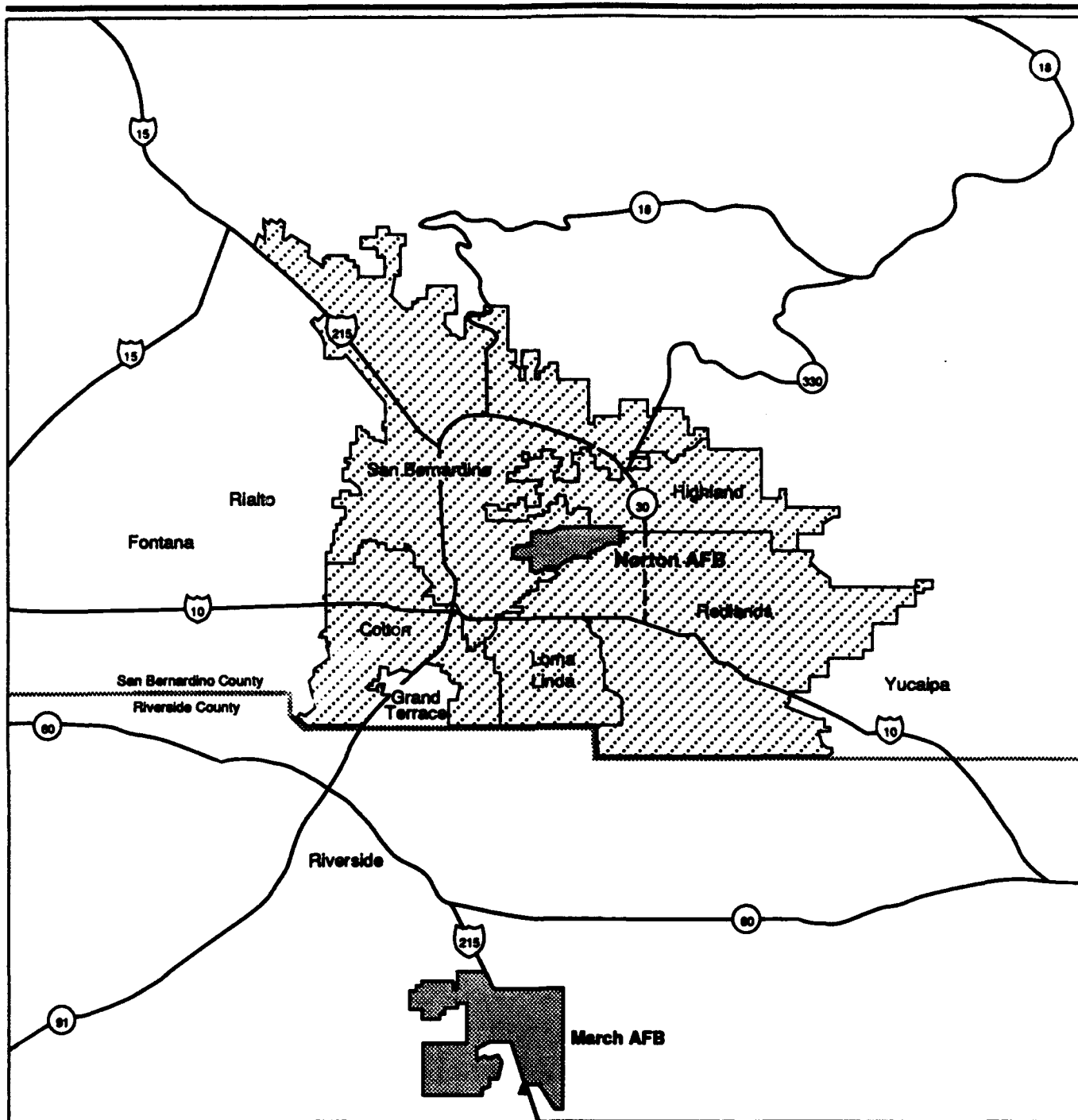
-  Interstate Highways
-  U.S. Highways
-  State Highways
-  Area of Concentrated Study (ACS)









#### Socioeconomic Study Area Map

Figure 2.1-1





# EXPLANATION

- |   |                                  |   |                     |
|---|----------------------------------|---|---------------------|
|  | Area of Concentrated Study (ACS) |  | Interstate Highways |
|  | City Boundaries                  |  | State Highways      |
|  | Highways                         |   |                     |
|  | Highway Under Construction       |   |                     |



## Area of Concentrated Study

Figure 2.1-2

metropolitan area which consists of San Bernardino, Riverside, Ontario, and the other cities and communities in and around these cities.

Total employment in 1988 amounted to about 856,000 jobs in the two-county Riverside-San Bernardino Primary Metropolitan Statistical Area (PMSA); approximately 25 percent was in the services sector, 19 percent in government, 18 percent in retail trade, 10 percent in manufacturing, 9 percent in construction, and the remaining 19 percent in other sectors. This region and the communities surrounding Norton AFB are slightly more dependent upon military employment than the nation. Over the past 20 years, however, this dependence on military employment has been declining as a result of large increases in civilian sector jobs.

In 1987, employment in the five communities surrounding Norton AFB was estimated at 126,545 (Southern California Association of Governments, 1989a). The breakdown in employment for these cities is as follows: San Bernardino (76,864), Redlands (19,793), Highland (2,717), Loma Linda (13,311), and Colton (13,860).

#### **Population**

San Bernardino and Riverside counties both experienced rapid population growth between 1980 and 1990. San Bernardino County increased by more than 523,000 persons during the 1980s (at an average rate of nearly 5 percent annually). Cities surrounding the base also witnessed rapid population growth during that decade. The populations of larger communities, such as San Bernardino and Redlands, grew at sustained moderate rates throughout the 1980s, though growth controls recently have been implemented in Redlands (City of Redlands, 1986); populations of smaller communities, such as Highland, Loma Linda, and Colton, grew more rapidly over the same time period. Both San Bernardino and Riverside counties are projected to grow steadily through 2020.

#### **Housing**

The number of housing units also increased dramatically in Riverside and San Bernardino counties during the 1980s, with growth slightly more rapid in the former. Housing also grew rapidly in communities near Norton AFB, with average annual growth rates particularly marked in Highland and Colton. The construction of multi-family units accounted for much of the housing growth in these areas, especially during the middle of the decade. The number of housing units, like population and other characteristics of the area, is expected to grow steadily over the coming three decades.

## **Public Services**

Public services in the vicinity of Norton AFB are provided by the municipalities of San Bernardino, Redlands, Highland, Loma Linda, and Colton, as well as the county of San Bernardino itself. The cities of Highland and Loma Linda contract some of their service requirements to the County of San Bernardino. These services include, but are not limited to, local government administration, public safety, fire protection, public works, public health, zoning, planning, and recreation. For police and fire protection, local municipal departments each maintain joint response agreements with one another to facilitate cross-boundary assistance during emergencies. Public services in unincorporated areas near the base are supplied by San Bernardino County and the California Department of Forestry and Fire Protection.

The San Bernardino City and Redlands unified school districts (USDs) provide primary and secondary public education to a large portion of school-aged children at Norton AFB and the surrounding communities. Both school districts experienced rapidly increasing enrollments over the past 10 years (44 percent for San Bernardino City USD and 50 percent for Redlands USD between 1980 and 1990) and both anticipate that enrollment growth will continue. Several state-operated junior colleges, state colleges, and universities which offer continuing education and training are also located within the region.

## **Public Finance**

Five cities (San Bernardino, Redlands, Highland, Loma Linda, and Colton), the county of San Bernardino, and two school districts (San Bernardino City USD and Redlands USD) provide and finance most of the basic public services to Norton AFB area residents. Local property and sales tax revenue, license and fee revenue, and intergovernmental transfers generally are the principal revenue sources of the cities. School districts depend, to a large degree, upon state education aid programs. Federal impact assistance under P.L. 81-874 programs plays a minor role in the two school districts analyzed.

## **Other Relevant Resources**

**Transportation.** Norton AFB and its immediate vicinity are accessible via Interstate 10 (I-10), Interstate 215 (I-215), and State Route (SR) 30. Five gates provide access onto the base, two of which are currently open on a 24-hour basis, one permanently closed, and the remaining two offering limited service. The closest commercial airline service to Norton AFB is Ontario International Airport, located about 20 miles west of the base. The area is also served by AMTRAK, the Southern Pacific, and the Atchison, Topeka & Santa Fe railroads.

**Utilities.** Norton AFB derives its water from four wells on base, all of which have been upgraded within the past 5 years. During peak demand periods, water can be delivered through the existing distribution system of the City of San Bernardino Water Department. Five other water purveyors also supply water to urban and agricultural areas in the region. Under an agreement with the Air Force, the San Bernardino Regional Wastewater Treatment Plant provides collection and treatment services to the base. Solid waste is disposed of at the three landfills, owned and operated by the county of San Bernardino. Electricity is provided to the base and surrounding communities by Southern California Edison. The Southern California Gas Company provides natural gas to the area.

**Airspace.** Airspace surrounding Norton AFB is under the control jurisdiction of the FAA Terminal Radar Approach Control (TRACON) at Ontario. Within a 20-mile radius encircling Norton AFB and Ontario International Airport are seven public use airports and March AFB which are all located within Riverside and San Bernardino counties. Airspace within this area is structured and controlled by the FAA and military air traffic control facilities to accommodate commercial, military, and general aviation activities at each of the respective airfields.

## **2.2 PRECLOSURE BASE PROFILE**

Established in 1941 as a 500-acre Army/Air Force supply facility, the installation was renamed from the San Bernardino Air Depot to Norton AFB in 1950, and now occupies 2,127 acres. The 63rd Military Airlift Wing (MAW) moved to Norton from Hunter AFB, Georgia in 1967, and is now the base's host organization. Tenant organizations number nearly 30 units. Assisting the 63rd MAW with its transport-readiness mission is the 445th MAW. Other major tenants include the Air Force Inspection & Safety Center, the Air Mobility Command's (AMC) NCO Academy West and 22nd Air Force NCO Leadership School, and headquarters of three Air Force organizations: Air Force Audit Agency (HQAFAA), Aerospace Audiovisual Service (AAVS), and the BMO.

### **2.2.1 Employment**

Total employment at Norton AFB decreased by approximately 1,600 jobs (13.8 percent) from FY 1987 to FY 1990 (Table 2.2-1). Almost all of this decline is from reductions in military personnel (804 persons) associated with intercontinental ballistic missile (ICBM) support activities and contract civilians (881 persons), with slight offsetting increases in the other civilian categories.

Responsible for all ICBM development activities for the Air Force, BMO directly employs nearly 550 military and about 480 civilian personnel and

**Table 2.2-1. Norton AFB Employment**

Employment Category	FY 87	FY 88	FY 89	FY 90
Military Personnel*	5,636	5,473	5,121	4,832
Civilian Personnel				
Appropriated Fund	2,827	2,811	2,899	2,865
Nonappropriated Fund/Base Exchange	677	787	734	726
Contract Civilians	2,393	1,621	1,580	1,512
Private Business On-Base	40	49	51	43
Total Employment	11,573	10,741	10,385	9,978

\* Does not include Non-Active Duty Reserve Forces: 3,281 in FY 87, 3,261 in FY 88, 3,134 in FY 89, and 3,042 in FY 90.

Sources: U.S. Air Force, 1988, 1989, 1990b, 1991b.

has directed the activities of several hundred contractor personnel over the past two decades.

### **2.2.2 Population and Housing**

Norton AFB population decreased from FY 1987 to FY 1990 (Table 2.2-2). In addition to a decline of 804 military personnel, military dependents also decreased by 5,450 during this period. The estimated number of military retirees within an economic impact region defined by the base decreased from about 10,000 in FY 1987 to approximately 9,500 in FY 1990, a decline of 5.7 percent. There are 264 family housing units in the Norton AFB inventory; 56 are located in the northwest portion of the base, and the remaining units are situated just north of the base at Victoria Avenue. The 29 dormitory facilities on Norton AFB can sleep approximately 2,200 persons.

### **2.2.3 Payrolls**

Total base payrolls (in current year dollars) remained relatively constant between FY 1987 and FY 1990, at about \$250 million (Table 2.2-3). Military payrolls dropped slightly during this period, but payrolls for civil service and nonappropriated fund civilians more than offset this decline in military payroll.

### **2.2.4 Expenditures**

Total annual expenditures have decreased from \$934 million in FY 1987 to \$540 million in FY 1990 (Table 2.2-4). Service expenditures are the largest category of annual expenditures at Norton AFB. The decline in services

**Table 2.2-2. Military Population and Housing, Norton AFB**

Category	FY 87	FY 88	FY 89	FY 90
<b>Military Personnel</b>				
Living on Base	1,782	1,581	1,377	1,210
Living off Base	3,854	3,892	3,744	3,622
<b>Military Dependents</b>				
Living on Base <sup>(a)</sup>	1,011	840	826	799
Living off Base	10,087	5,860	5,276	4,849
<b>Military Retirees<sup>(b)</sup></b>	10,074	9,512	9,450	9,502
<b>Housing Assets</b>				
Family Housing Units	263	264	264	264
Unaccompanied Quarters				
Dormitory Facilities	34	29	26	29
Bed Capacity	2,324	2,292	2,263	2,155

Notes: (a) Data before FY 1988 are not strictly comparable to other years; average household size of military families assumed to be 2.39 for later year projections.  
(b) Military retiree data are for a larger ROI.

Sources: U.S. Air Force, 1988, 1989, 1990b, 1991b.

**Table 2.2-3. Norton AFB Payrolls (thousands of current year dollars)**

Category	FY 87	FY 88	FY 89	FY 90
<b>Military</b>	138,996	136,490	136,436	132,673
<b>Appropriated Fund Civilians</b>	103,296	105,242	106,213	110,845
<b>Nonappropriated Fund and Other Civilians</b>	6,051	5,638	6,612	7,284
<b>Total Payrolls</b>	248,343	247,370	249,261	250,802

Sources: U.S. Air Force, 1988, 1989, 1990b, 1991b.

expenditures was particularly dramatic, accounting for nearly the entire decline by decreasing from \$908 million in FY 1987 to \$510 million in FY 1990.

The base offers a range of programs and services for active and reserve military personnel, their dependents, and retired military persons in the area. These services include a clinic, recreational facilities, a base exchange and commissary, and housing. The clinic at Norton offers outpatient-medical, dental, and pharmaceutical services. On-base recreational facilities include a

**Table 2.2-4. Norton AFB Annual Expenditures**  
(thousands of current year dollars)

Expenditure Category	FY 87	FY 88	FY 89	FY 90
Total Construction	8,717	5,789	2,122	4,654
Total Services	908,412	409,868	380,905	509,781
Commissary/Base Exchange	3,302	5,917	6,411	7,014
Education	1,215	1,345	1,282	751
Health	5,381	5,934	5,901	6,876
Temporary Duty (TDY)	2,361	342	475	435
Other	4,749	5,422	8,788	10,058
Total Annual Expenditures	934,137	434,566	405,884	539,569

Sources: U.S. Air Force, 1988, 1989, 1990b, 1991b.

bowling center, three swimming pools, Palm Meadows Golf Course, four softball fields, ten tennis courts, a sports and fitness center, auto hobby shop, a youth center, and arts and crafts facilities.

#### **2.2.5 Educational Facilities**

AMC's NCO Academy West and the 22nd Air Force NCO Leadership School occupy two base facilities, totaling nearly 70,000 square feet of floor space. There are no elementary or secondary level educational facilities on the base.

### **2.3 CLOSING BASE PROFILE**

#### **2.3.1 Closure Profile**

Closure activities involve disbanding units as well as the transfer of personnel and equipment to other bases. More than half (59 percent) of the current personnel belong to units that will disband, most notably the 63rd MAW (53 percent of all personnel) which is scheduled for deactivation over a 2-year period beginning the first quarter of FY 1992 (October to December, 1991). Another 30 percent of base personnel are scheduled to relocate, with more than half relocating to March AFB, approximately 20 miles away in Riverside County, California. All units who are moving or disbanding will have departed the base by March 31, 1994, when Norton AFB will be officially closed.

Headquarters BMO currently is scheduled to remain at Norton AFB beyond the 1994 closure date. This organization also supports contracts with various private contractors in the area such as TRW. These personnel are assumed to remain in the local area and are not included in the closure

analysis. In addition, upon closure of the base under the No-Action Alternative, existing leases, such as that with the Lockheed Corporation, would be terminated. Employees associated with these activities, however, also are assumed to remain in the local area as these activities are relocated to other facilities within the ROI, and thus are not included in the closure analysis.

Norton AFB family housing assets will be occupied by March AFB personnel and their dependents. The economic contribution and demands of these personnel are not addressed in the project analysis but are included in the post-closure conditions.

#### **2.3.2 Post-Closure (Caretaker Status)**

Assuming no reuse activities, the base would be placed in caretaker status at the time of closure. Caretaker status would involve minimal staffing to maintain existing grounds and facilities. An estimated 50 direct on-site jobs would be required for these caretaker activities.



### **3.0 EVALUATION AND CHARACTERIZATION OF SOCIOECONOMIC RESOURCES**

---

This chapter defines the socioeconomic ROI and ACS for individual socioeconomic issues, presents the data sources and methods used for both post-closure and impact analyses, and describes post-closure conditions. Preclosure conditions are described for two distinct periods of time: actual conditions through 1990 and projected conditions through base closure in 1994. Post-closure conditions, with the base assumed to be in caretaker status, and projected impacts resulting from potential reuse activities associated with the Proposed Action and alternatives, are discussed in Chapter 4.

#### **3.1 REGION OF INFLUENCE AND AREAS OF CONCENTRATED STUDY**

This study evaluates the socioeconomic effects of closure and reuse of Norton AFB at two geographic scales. The first scale is the ROI, intended to be the region in which the principal direct and secondary socioeconomic effects of actions at Norton AFB are likely to occur. The second scale is the ACS, the area where effects are expected to be of most consequence for local jurisdictions.

Two factors were important in determining the ROI and ACS used in this analysis. The first was the distribution of places of residence of current military and civilian personnel working at Norton AFB. This residential distribution has a critical influence on where the greatest effects of closure will occur. It also provides a useful guide to the probable effects of reusing the base, since it reflects availability of suitable housing, commuting patterns, and attractiveness of area communities for people employed on the site. As described later, in Section 3.3.1, both the civilian distribution and the distribution of military personnel serve to quantify the effects of closure. However, only the current distribution of civilian personnel is used to estimate the future distribution of direct workers' residences. Other organizations such as the BMO and their contractor work force (TRW, as an example) would not be relocating from the area and, thus, the residency patterns associated with these organizations were not included for further analysis.

Table 3.1-1 displays the residential distribution by school district and zip code of a large sample of the persons presently employed on the base. School district boundaries were used to present and analyze this information because school districts provide a comprehensive and mutually exclusive coverage of the entire geographic area. Data on the zip codes of residences for a large portion of base personnel were obtained from the base personnel offices. These zip codes were mapped to school districts to derive the

**Table 3.1-1. Residential Locations of Norton AFB Military and Civilian Personnel  
by School District, Zip Codes, and County**

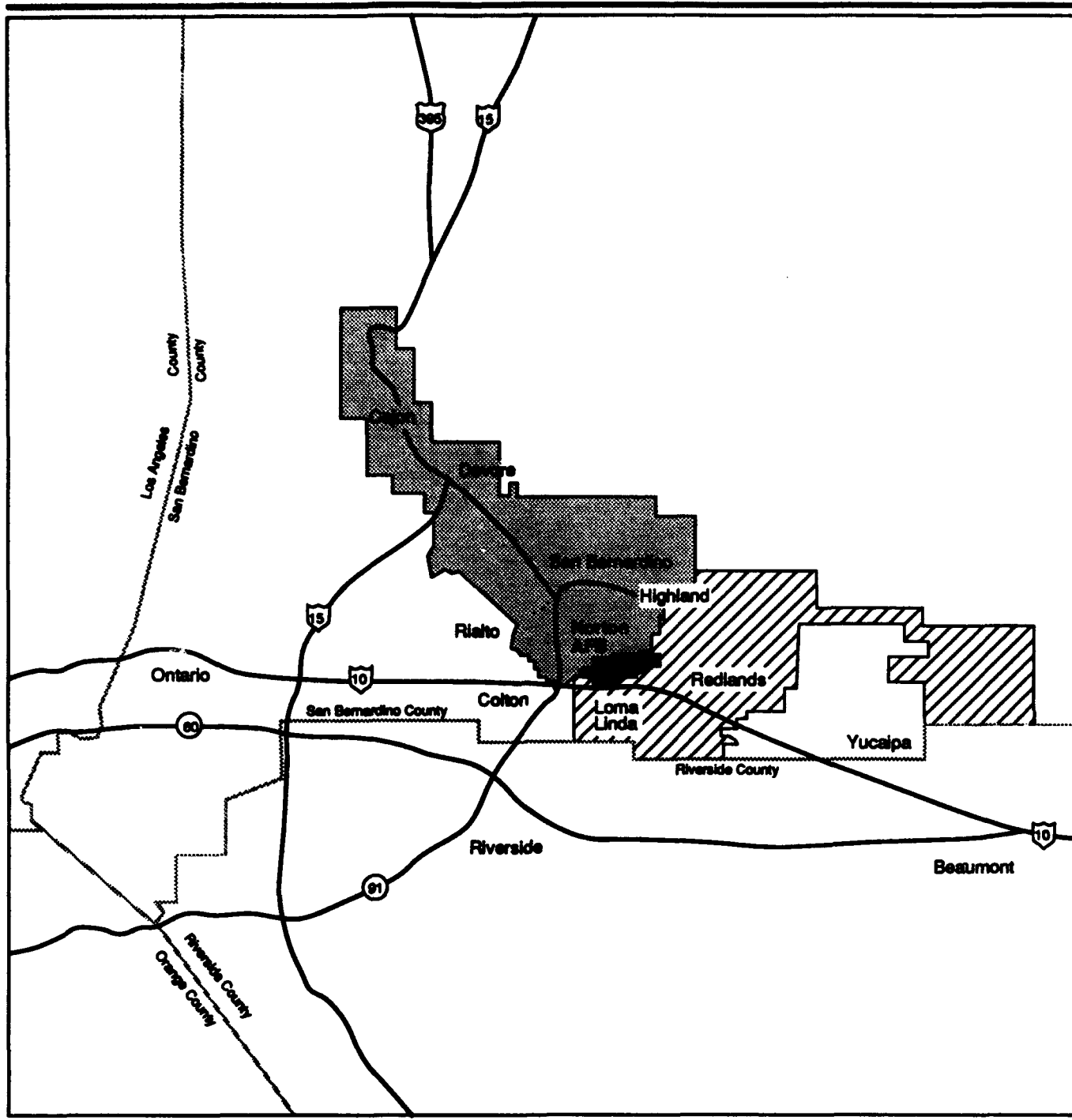
School Districts	Zip Codes	Military	Civilian	Total	Percent of Total
San Bernardino City Unified School District	92401, 92402, 92404, 92405, 92406, 92409, 92411, 92412, 92413, 92415, and parts of 92346, 92376, 92408, 92410, and 92407.	1,117	680	1,797	39.2
Redlands Unified School District	92318, 92339, 92354, and parts of 92408, 92373, 92359, 92346, and 92374.	986	366	1,352	29.5
Rest of San Bernardino County	All other San Bernardino County zip codes and parts of 92374, 91720, 92407, 92373, 92408, 92410, 92359, and 92376.	411	306	717	15.6
Riverside County	All other Riverside County zip codes and parts of 91720 and 92373.	304	266	570	12.4
Colton Joint Unified School District	92324	103	50	153	3.3
<b>Total</b>		<b>2,921</b>	<b>1,668</b>	<b>4,589</b>	<b>100.0</b>

Source: U.S. Air Force, 1991a; Mapping to school districts and county areas prepared for this study, 1991.



information presented in Table 3.1-1. Most base personnel currently live within the boundaries of the San Bernardino City USD and Redlands USD (Figure 3.1-1).

Less than 1 percent of each personnel category resides in Grand Terrace; therefore, the city was not included in the ACS. The city of Grand Terrace is, however, included in the ROI.

The second factor in determining the extent of socioeconomic impacts was the degree of linkage among the economies of communities in the region. This linkage, based on trade among sectors within the region, determines the nature and magnitude of multiplier effects of actions at the base. Norton AFB is located within the Riverside-San Bernardino PMSA, a two-county region identified by the federal government as possessing extensive economic interactions and linkages. Due to these interactions, most of the regional socioeconomic effects associated with closure and reuse of Norton AFB would occur within San Bernardino and Riverside counties.



# **EXPLANATION**

-  San Bernardino Unified School District
-  Redlands Unified School District

## **School District Boundaries**



**Figure 3.1-1**

Considering both the residential locations of Norton AFB personnel and the nature of economic interactions in the region, San Bernardino and Riverside counties were selected as the ROI for this analysis. San Bernardino, Redlands, Highland, Loma Linda, and Colton were selected as the ACS for the issues addressed in this analysis, due to the expectation that these communities surrounding the base would be most affected by persons relocating from and to the area due to Norton AFB closure and reuse. Specific socioeconomic factors further influencing the selection of study areas are discussed below.

### **3.1.1 Economic Activity**

Regional purchases associated with Norton AFB, both base spending for goods and services and base personnel spending of payrolls, were reported in ERISs prepared annually for FYs 1987 through 1990 (see Section 2.2). The regional expenditures cited in these statements were reported for an area encompassing a 50-mile radius around the base, which primarily includes the Riverside-San Bernardino PMSA. Although the 50-mile radius includes portions of both eastern Los Angeles, Kern, and northeastern Orange counties, it is anticipated that almost all of the regional demands (the amount of goods and services purchased net of intermediary consumption) associated with reported payroll expenditures and most of the demands associated with reported goods and services expenditures occur within Riverside and San Bernardino counties. Most demands associated with regional economic effects of base closure and potential reuse activities at the site also are anticipated to be concentrated within the two-county region. Potential indirect effects in counties outside the two-county ROI are expected to be small relative to those counties' total level of economic activity and are outside the scope of this analysis.

### **3.1.2 Population**

The population impacts of closure and potential reuse of Norton AFB are analyzed at both regional and local levels. As discussed in the previous section, the ROI consists of Riverside and San Bernardino counties. In addition, an ACS for population is defined based upon the likely residency patterns of personnel associated with each reuse alternative and the communities most affected by base closure. The school districts presented in Table 3.1-1 serve the communities of San Bernardino, Redlands, Highland, Loma Linda, Colton, and Grand Terrace. Over 70 percent of current Norton AFB military and civilian personnel reside in these school districts and the communities served by these districts. The remaining personnel are widely scattered among other San Bernardino County and Riverside County communities (such as Rialto, Fontana, and Yucaipa) and represent a negligible portion of the total population in these areas. The ACS consists of the five communities of San Bernardino, Redlands,

Highland, Loma Linda, and Colton. As indicated earlier, less than 1 percent of base personnel reside in Grand Terrace; therefore, this community is not included in the ACS.

### **3.1.3 Housing**

Housing impacts resulting from the closure and reuse of Norton AFB are analyzed at both regional and local levels. Housing impacts are expected to follow the distribution of population impacts as discussed above. Thus, the ROI and ACS are the same for housing issues as they are for population issues.

### **3.1.4 Public Services**

The public services analysis focuses on the principal jurisdictions likely to be most affected by base closure and reuse, including those that provide services directly to Norton AFB military and civilian personnel or their dependents, and those that have public service and facility arrangements with the base. In addition to the cities of San Bernardino, Redlands, Highland, Loma Linda, and Colton, these jurisdictions include both the San Bernardino City USD and Redlands USD, within which reside approximately 70 percent of Norton AFB military and civilian personnel (see Table 3.1-1). Component police departments and fire protection agencies, including the units of the San Bernardino County government responsible for providing services to unincorporated areas or under contract to incorporated areas, also are included.

### **3.1.5 Public Finance**

The ACS for public finance consists of the local governmental units expected to receive the majority of the public service impacts under base closure and reuse. These jurisdictions include San Bernardino County; the cities of San Bernardino, Redlands, Highland, Loma Linda, and Colton; and the San Bernardino City USD and the Redlands USD.

### **3.1.6 Other Relevant Resources**

**Transportation.** The ACS for the transportation analysis includes the communities of San Bernardino, Redlands, Highland, Loma Linda, and Colton with emphasis on the immediate area surrounding Norton AFB. Within this geographic area, the analysis examines the existing principal road, air, and rail transportation networks, including those segments of the transportation networks in the region that serve as direct or indirect linkages to the base, and those that would be affected during reuse, including those used by Norton AFB personnel.

**Utilities.** The ACS for assessing utility systems is made up of the service areas of each utility purveyor servicing communities most affected by the closure and reuse of Norton AFB. The ACS includes the communities of San Bernardino, Redlands, Highland, Loma Linda, and Colton.

**Airspace.** The ACS for assessing economic effects from changes in airspace use is the area encompassing the principal airport and smaller public and private airfields where operations could be affected by closure and reuse of Norton AFB. This is generally a 20-mile radius area encircling Norton AFB and Ontario International Airport. Airports and airfields included in this assessment are Ontario International, March AFB, Redlands Municipal, Riverside Municipal, Flabob, and Rialto Municipal.

## **3.2 DATA SOURCES**

### **3.2.1 Economic Activity**

County-level jobs and earnings data, provided by major industrial sector, and per-capita personal income data, were obtained for the years 1969 through 1988 from the Regional Economic Information System (U.S. Bureau of Economic Analysis, 1990a). Data on national output and employment, by industrial sector, were obtained for the years 1958 through 1988 from computer printouts of the U.S. Office of Economic Growth (U.S. Bureau of Labor Statistics, 1989). Indices for the conversion of current year dollars to constant 1990 dollars were provided in the Annual Report of the U.S. Council of Economic Advisors (U.S. Council of Economic Advisors, 1991). Data pertaining to the existing labor force and employed workers in the Riverside-San Bernardino PMSA were obtained from the California Employment Development Department. This source also provided additional information pertaining to recent trends in the major industrial sectors of the regional economy (California Employment Development Department, 1991). Information concerning the largest employers in the San Bernardino area and projections of future employment levels was obtained from local municipal planning departments and chambers of commerce publications. Data concerning Norton AFB spending within the region were obtained from Norton AFB ERISs (U.S. Air Force, 1988; 1989; 1990b; 1991b).

### **3.2.2 Population**

The primary source of population data for this study was the U.S. Bureau of the Census. The data examined included the 1990 census of population and housing for the United States (U.S. Bureau of the Census, 1991). Supplemental population data were available from the 1980 census of population (U.S. Bureau of the Census, 1982a), which when compared with the 1990 data provide an appreciation of the change experienced in the ROI during the last decade. Although Highland was not incorporated until recently, census data are available for this community because it was

named as a census-designated place in 1980. Population projections prepared for individual counties by the Demographic Research Unit of the California Department of Finance (CDF) and the Southern California Association of Governments (SCAG) yield insights on anticipated population changes in Riverside and San Bernardino counties over the next two decades (California Department of Finance, 1986, 1991; SCAG, 1989a, 1989b). County- and community-specific concerns regarding population growth in certain portions of the ROI are detailed in selected planning documents (City of Redlands, 1988; San Bernardino County, 1990b). Air Force payroll data by zip code for both military and civilian personnel at Norton AFB were used to determine the distribution of employees within the ROI and ACS.

### **3.2.3 Housing**

The major source of data on housing characteristics in the ROI is the 1990 census of population and housing (U.S. Bureau of the Census, 1991). Additional housing data are available from the 1980 census of housing (U.S. Bureau of the Census, 1982b), which when compared to the most recent census enable an examination of change over time for several key housing characteristics. Data in the current construction report series provide information on housing units authorized by building permits (U.S. Bureau of the Census, 1981, 1982c, 1983, 1984, 1985, 1986, 1987b, 1988, 1989, 1990), shedding light on the capacity of the construction industry in a particular place to provide housing. Estimates of 1991 total housing units and vacancy rates are available at the county and community levels from the Demographic Research Unit of the CDF (California Department of Finance, 1991). Supplemental housing data were provided by various other federal, state, county, community, and private sector sources. Particularly useful were planning documents from the communities of San Bernardino, Redlands, Highland, and Colton (City of San Bernardino, 1989a; City of Redlands, 1988, 1989b; City of Highland, 1991; City of Colton, 1987; see also San Bernardino County, 1990b). Although recently incorporated, the city of Highland was defined as a census designated place in 1980; therefore, data on housing in this community are available in various U.S. Bureau of the Census publications.

### **3.2.4 Public Services**

Information regarding staffing levels, jurisdictional boundaries, degrees of use, equipment, and facilities for public service providers has been acquired directly through personal communication with agency representatives or from documents published by these agencies. Additional information regarding public education has been obtained from the California Department of Education in Sacramento and the San Bernardino County Office of Education. These data included financial reports and enrollment forecasts by local school districts. Information related to similar community services

currently provided by the federal government within the boundaries of Norton AFB have been acquired from representatives of the base.

### **3.2.5 Public Finance**

Data sources for public finance include the most recent financial reports, typically through FY 1989 or FY 1990, and the current year budget reports for the potentially affected local government units in the ACS. The financial reports provide the actual amount of revenue collected and money spent over the most recent 5- to 10-year period and compare these amounts to budgeted levels. Budget reports were used as sources of specific property tax rate and assessed valuation information. In addition, budget projections were used for post-closure conditions.

### **3.2.6 Other Relevant Resources**

**Transportation.** Data regarding road and highway transportation, including maps, circulation plans, highway improvements plans, and traffic volume counts were collected from Norton AFB, local jurisdictions, and the California Department of Transportation (Caltrans) District 8 Office. Data addressing private, passenger, and air cargo service in the region were acquired directly from representatives of airports serving the area and air transportation studies of the area. Information regarding rail transportation was obtained from San Bernardino County maps of the region.

**Utilities.** Representatives from various branches and facilities at Norton AFB, including Civil Engineering and the Comptroller's Office, provided historic consumption data, peak demand characteristics, storage and distribution capacities, and related information for base utilities. Information also was obtained from various engineering reports and the Norton AFB Comprehensive Plan. Public and private utility purveyors and related county and local agencies also were contacted to obtain historic consumption data, peak demand characteristics, storage and distribution capacities, and related information, including projections of future utility demand for the particular service areas of each utility provider.

**Airspace.** The principal source of information for the airspace assessment included in this study were interviews conducted with airport operators and owners, and an FAA representative. These interviews regarded the nature and extent of current interactions between potentially affected airports and Norton AFB, and expected changes in this interaction upon closure and reuse of the base.

## **3.3 METHODS**

This section presents methods used to evaluate existing and future socioeconomic conditions, both for the post-closure scenario (caretaker status) and for the Proposed Action and other alternatives. The description



of existing socioeconomic conditions includes important indicators that provide a basis for comparison to national trends, as well as to future conditions with and without the Proposed Action and alternatives.

All changes exclusive of potential reuse were considered post-closure condition changes and include impacts of closure. Post-closure refers to closure conditions without reuse. All changes associated with the Proposed Action and reuse alternatives were considered impacts. The No-Action Alternative is considered equivalent to post-closure conditions.

Historic data were used to define existing conditions and to develop projections of future socioeconomic conditions that would result from base closure without reuse. This section identifies any potential beneficial or limiting factors present within the region. Impact assessment (Chapter 4) then determines if these limiting factors could make the region either more or less susceptible to negative socioeconomic impacts as a result of the Proposed Action and alternatives.

### **3.3.1 Economic Activity**

The socioeconomic impact analysis utilized total output, employment, and earnings multipliers for the Riverside-San Bernardino PMSA, obtained from the U.S. Bureau of Economic Analysis (BEA) Regional Input Output Modeling (RIMS II). These interindustry multipliers were prepared using the U.S. input-output table in combination with the most recent region-specific information describing the relationship of the regional economy to the national economy. The BEA's RIMS II model is based on research by Cartwright et al., (1981).

The same methodology was used to develop quantitative projections of economic activity for the post-closure conditions, the Proposed Action, and the other reuse alternatives. Changes in regional demand in each local industrial and household sector were estimated as follows:

- For preclosure and closure conditions, demands from residual base operations and caretaker activities were estimated from employment, payroll, and contract data published in ERISs for Norton AFB.
- For reuse, construction-phase demands were estimated from square foot cost parameters published by R.S. Means, and from estimates of the total amount of square feet of new construction, renovation, and demolition activity planned under each reuse alternative. The square footage estimates, and operations phase demands were estimated from land-use jobs planning factors, estimated regional earnings-per-job and output-per-job ratios by industrial sector, and RIMS II coefficients.

These primary or direct effects were then multiplied, using RIMS II coefficients specific to the regional economy to provide estimated total spending associated with the reuse alternatives. Input-output sectors were selected to reflect the anticipated spending profile associated with the Proposed Action and alternatives to capture the economic characteristics of each option within the defined region. The forecasts of total output, employment, and earnings within the region then became inputs to the local area impact analysis for distribution to subcounty areas.

Numbers of in-migrant workers filling the jobs associated with each alternative and out-migrant workers associated with phase-down of base operations were estimated according to a set of proportional assumptions. The percentages were extrapolated from assumptions developed by Spiegel and Hewing (1989) for a study of the closure of Chanute AFB in Rantoul, Illinois. Almost all military personnel would leave the area when the base closes. The BMO and its contractor work force are expected to remain in place at Norton; therefore, employment and earnings associated with these activities are not included in the closure or reuse analysis. Moreover, the study does not account for the relocation of some military and civilian personnel to March AFB in the closure, or reuse analysis, since they also remain within the same ROI. Most civil service employees are in skilled positions, which increases the likelihood of migration from the area. Contract employees other than those associated with BMO, generally are employed under service contracts at the base, many of which are in low-skilled positions, which decreases the likelihood of out-migration.

The ROI for Norton AFB is much more urbanized than the region studied by Spiegel and Hewings, so out-migration in each category is expected to be less. There are generally more job opportunities for various skill levels than was the case in the Spiegel and Hewings study which should encourage more people to remain in the ROI. Similarly, military retirees will still be within commuting distance of medical care at March AFB.

In-migrant parameter values are related to the out-migrant parameter values. Direct on-site operations were assumed to require skill levels similar to those of civil service personnel. The number of students in-migrating was assumed to be less for a community college than for a 4-year college or university. These parameter values are specified in Table 3.3-1.

Under the relocation parameter values used in this analysis, employment impacts are expected to be greater than population impacts. For example, for each 100 direct jobs associated with a reuse plan, 30 are projected to be filled by workers moving into the ROI while the remaining 70 jobs would be filled by local hires. For secondary jobs, an even smaller fraction of jobs (5 percent) is projected to be filled by relocating workers. Depending on the mix of direct and secondary jobs, it is likely that employment impacts of a

**Table 3.3-1. Assumed Percentages of Population Relocation by Employment Category**

<b>Employment Category</b>	<b>Percent Relocating to/from Region</b>	<b>Household Size</b>
<b>Out-migration categories <sup>(a)</sup></b>		
Military	95	2.39
Civil Service (appropriated fund)	22	2.91
Nonappropriated fund	5	2.91
Contract	5	2.91
Secondary	5	2.91
Retired military	10	2.00
<b>In-migration categories <sup>(b)</sup></b>		
Direct on-site operations <sup>(c)</sup>	30	2.91
Construction	10	2.91
Secondary (on- and off-site)	5	2.91
Students	50	1.00

Notes: (a) The out-migration categories relate to current base operations, not including BMO. These assumptions account for an estimated 5 percent of military personnel and 44 percent of civilian personnel scheduled to relocate within the region to March AFB.

(b) The in-migration categories relate to the various reuse alternatives.

(c) This assumption applies to all the reuse alternatives except Caretaker Status, for which in-migration is assumed to be zero.

reuse scenario would exceed population impacts, even with dependents included as a component of the population impact.

This outcome is consistent with the general economic and demographic character of the San Bernardino area and the rest of the ROI. An enormous and diverse labor force resides within the Riverside-San Bernardino PMSA and is available to take jobs in the area. Creation of jobs on the Norton AFB site would draw on a portion of this readily available supply of local labor. The number of persons commuting to work at the site from outside the ROI, either on a daily or weekly basis, is expected to be negligible.

The relocation assumptions specified in Table 3.3-1 were judged to be the most likely values applicable to this study. Other parameter values would result in either higher or lower population impacts than those resulting from the assumptions specified. Such outcomes are certainly possible, especially considering the construction activity changes that might accompany reuse alternatives. Such changes are quite difficult to assess, however, and would not alter the availability of workers of all skill types, including retired Air Force personnel already living in the area.

The average size of in-migrating families was assumed to correspond, for most categories, to the average size of families migrating between states during the 1980s. For out-migrating military families, the household size is

based on Norton AFB personnel records. For students and retired military, the average household sizes were assumed to be 1.00 and 2.00, respectively. These assumptions were specific to each type of employment, including direct and secondary employment by category (Table 3.3-1).

The intra-regional allocation analysis separately accounts for the distribution of direct and secondary workers and their families among the various residential opportunities within the region. The direct portion of the impact allocation process accounts for the two main factors affecting the distribution of in-migrant direct workers: (1) the number of workers anticipated to be directly involved with each alternative and (2) the locations and relative attractiveness of residential opportunities within the region.

The number of workers associated with each alternative was estimated from land uses and other characteristics of each alternative. The relative attractiveness of residential opportunities was estimated from Norton AFB zip code distribution data for civilian workers. The residential choices of current Norton AFB civilian workers were anticipated to coincide with the residential choices of direct in-migrants to the area. This assumption was based on the expectation that the attractiveness of residential location, including attributes such as adequate public and commercial services and proximity to work location, would best be measured by the revealed preferences of current base civilian workers. Other organizations such as the BMO and their contractor work force (i.e., TRW) would not be relocating from the area and, thus, the residency patterns associated with these organizations were not included for further analysis.

Table 3.3-2 shows the relative percentages of military personnel, other direct workers, and secondary workers residing in each local area. These percentages were calculated from the sample data presented in Table 3.1-1. In the first stage of the allocation process, data on residential locations of employees by zip code were mapped to school districts. A further allocation to selected communities was made according to the ratio of community population to school district population, using data derived from census reports. The distribution of workers associated with secondary economic effects was assumed to be proportional to the relative sizes of communities in the region.

Once the allocation of direct and secondary workers and their families was made (see Table 3.3-2), other attributes that resulted from RIMS II, such as earnings and gross sales, were distributed in accordance with the allocation of in-migrants.

### **3.3.2 Population**

Population changes associated with Norton AFB closure, the Proposed Action, and reuse alternatives are an important determinant of other

**Table 3.3-2. Distribution of Workers Related to Norton AFB**

Local Areas	Military (percent)	Civilian Direct (percent)	Civilian Secondary Worker Spending (percent)	Goods and Services (percent)
<b>San Bernardino City USD</b>	34.9	38.3	38.3	7.7
City of San Bernardino	28.3	31.1	31.1	6.2
City of Highland	5.9	6.5	6.5	1.3
<b>Redlands USD</b>	30.8	20.6	20.6	3.0
City of Redlands	23.5	15.8	15.8	2.3
City of Loma Linda	6.8	4.5	4.5	0.7
<b>Rest of San Bernardino County</b>	16.0	20.1	20.1	44.8
City of Colton	3.2	2.8	2.8	1.5
<b>Riverside County</b>	9.5	15.0	15.0	44.5
<b>Riverside-San Bernardino Counties</b>	91.2	94.1	94.1	100.0
<b>Other Areas</b>	8.8	5.9	5.9	0.0
<b>Total</b>	100.0	100.0	100.0	100.0

Note: Because of overlapping boundaries, subtotals do not always add up.

Source: U.S. Air Force, 1991b.

socioeconomic and environmental impacts. These population changes have three key components: (1) baseline growth, (2) relocating workers and their dependents, and (3) natural increase (births minus deaths) of relocating workers over the long term.

Baseline population projections for San Bernardino and Riverside counties were prepared by SCAG in 1988 and adopted in 1989 (SCAG, 1989b). These projections assumed continued operation of Norton AFB and George AFB within the ROI. The forecasts were adjusted in this study to reflect the impacts of base closure by subtracting the estimated population loss expected with closure of those bases. The relocation of workers in response to closure and subsequent reuse was determined by utilizing the methods and assumptions discussed in Section 3.3-1. The number of dependents expected to relocate with these workers was estimated based on household size from data collected by the U.S. Bureau of the Census (see Table 3.3-1).

The natural increase of population relocating to the ROI due to reuse of the base was calculated using demographic estimates developed for San Bernardino County by the CDF (California Department of Finance, 1990b). The CDF estimates indicate a natural increase in the county of 9.1 percent between 1980 and 1989, equivalent to an approximate 20 percent gain over a 20-year period. This analysis assumes the in-migrating population

would exhibit similar fertility and mortality characteristics during the 20-year study period.

To evaluate anticipated population impacts, trends in the ROI preceding the base closure announcement in 1988 were compared to potential future changes associated with each reuse option. Population projections, especially those prepared before 1988, are useful to gauge long-range demographic expectations against the impacts projected to occur in the ROI as a consequence of modifying the use of the Norton AFB site. Impacts on the five ACS communities are important, as both the ROI and (to a lesser extent) San Bernardino County include areas where impacts will not be felt as intensely.

### **3.3.3 Housing**

Changes in housing demand are anticipated to accompany population changes associated with the Norton AFB closure and reuse. Modifications in housing demand for each reuse option were estimated based upon the migration projected for that alternative, under the assumption that each in-migrating family would require one housing unit and each out-migrating family would relinquish one unit. The number of relocating households was calculated by dividing the number of people projected to in-migrate to each place by the average family size of state-to-state migrating families (U.S. Bureau of the Census, 1987a).

Expected housing availability was considered at regional, county, and community levels based upon recent housing construction and vacancy trends. Projected housing impacts associated with the various Norton AFB reuse alternatives then were examined in terms of the changing availability of housing. Housing projections prepared by government agencies complemented data on historic vacancy and construction trends in addressing future housing availability.

### **3.3.4 Public Services**

Potential impacts to local public services due to changes in demand by the closure and reuse of Norton AFB were determined for the region's key public services: local government, public education, police protection, fire protection, and health care. Impacts were determined for the jurisdictions that have the closest affiliations with Norton AFB military and civilian personnel and dependents, as well as jurisdictions likely to be most affected by reuse of the base. Changes in demand for government employees, sworn officers, and fire fighters are based on both the population change associated with each alternative (using calculated per-capita service ratios averaged over the most recent 2 or 3 years) and changes in the area served. Impacts to public services in the immediate vicinity of the site may be exacerbated by current or future ROI residents choosing to reside at the site

instead of elsewhere in the region. This settlement pattern could have impacts on local government, public education, police and fire protection, and health care services. These impacts, however, are assumed to be part of the region's baseline growth; therefore, they are considered as a redistribution of existing and future growth within the ROI.

The number of workers at the site, their accompanying dependents, and their settlement patterns would affect public service demand and service provision throughout the ROI. Current levels of public service (students per teacher, key employee per 1,000 population ratios, and geographic service area per employee ratios) are used as standards of service at each geographic level examined. For San Bernardino County, service standards were calculated using the total county population. Potential project impacts are determined by either the necessary addition or reduction of public service employees (e.g., municipal employees, public school teachers, police officers, fire fighters, health care providers) needed to serve resulting project-related population increases or decreases and/or changes in a jurisdiction's area of service responsibility while maintaining current standards.

Several key assumptions regarding future jurisdictional control of base property under the various reuse alternatives were made in determining the impacts to public services. These assumptions also apply to the assessment of public finance impacts.

The base currently is located within the city limits of San Bernardino. However, public service provision and facility support (with some exceptions, such as public education) are the responsibility of the federal government. Under all alternatives, the city of San Bernardino would become responsible for serving the demand for municipal services, such as police protection, fire protection, and health care services after the base closes. Public education would remain the responsibility of the San Bernardino City USD. Under the reuse plans involving airport activities, a proposed airport authority also would be involved in the provision of some specialized fire suppression services.

Projected changes in public school enrollments were estimated based upon the results of the population analysis and local school district enrollments and financial data. The number of future public school instructors that would be required was based on enrollment projections and existing student/teacher ratios. The number of public servants needed to meet future demand and maintain existing levels of service for other public services was determined using projected population changes and existing level of service ratios, unless otherwise indicated by local officials. Finally, the analysis examined the geographical distribution of potential impacts, the ability of existing services and facilities to adjust to these impacts, and any potential problems arising from base closure and reuse.

### **3.3.5 Public Finance**

Local jurisdiction finances were evaluated based on changes in historic revenue and expenditure levels, changes in fund balances, and reserve bonding capacities. In this analysis, the following assumptions were made.

- Sales and income taxes are responsive to changing income levels.
- Interest earnings are unaffected by project activities.
- Property taxes are directly related to the additional land conveyed to taxable entities.
- Expenditures change in response to changing service demands.

Post-closure conditions and effects of alternative scenarios were assumed to be determined by:

- Population increases (or decreases) in each jurisdiction, including school districts
- Earnings and income gains (or losses)
- Potential changes in each jurisdiction's real property and personal tax base.

Revenue impacts were estimated for both the tax and non-tax revenue sources of each jurisdiction. The revenue sources analyzed were those listed in the combined statement of revenues, expenditures, and changes in fund balances of the financial reports of each jurisdiction. For counties and municipalities, the focus was on the general fund and special revenue fund accounts. Other funds, such as enterprise funds which support government activities and are funded principally through user charges without contributing to the general tax burden of area residents, were not included in the analyses. Examples of these types of operations include an airport facility, certain recreational activities (swimming pools, softball fields supported by user charges, as examples), and some utility operations. For the school districts, the focus was on the general fund which accounts for the majority of direct instruction and related support service costs.

For counties and municipalities, the revenue sources analyzed are typically property taxes, sales taxes, other taxes, charges for services, fines, fees, licenses and permits, intergovernmental, and miscellaneous sources. For school districts, revenue sources are typically the revenue limits source revenue, other state and local sources, and federal sources.



For the counties and municipalities, per-capita rates (generally over the most recent 3- to 5-year period; although data for the city of Highland, due to its recent incorporation, was available for only 1 year) were calculated for those revenue sources assumed to increase (or decrease) with changing population levels. These rates were converted to constant 1990 dollar values, unless otherwise specified (using the implicit price deflator for state and local government purchases of goods and services) and then averaged over the period.

The revenue sources assumed to vary with changing population levels are charges for services, fines, fees, licenses and permit revenues, other taxes, intergovernmental transfers, and miscellaneous revenues. The interest earnings component of the miscellaneous category (use of money and property) was assumed not to be affected by changing population levels and thus the per-capita rate for this revenue source was reduced accordingly. Where the interest earnings component of miscellaneous revenues was not specifically presented in the income statements, for estimating purposes, the calculated per-capita rate for the miscellaneous revenue source was reduced to one-half of the calculated level.

For the closure analysis, these rates were multiplied by the estimated annual site-related population loss (from 1988 levels, the year closure was announced) to estimate the loss in revenues from these sources due to base closure. Under reuse, these rates were multiplied by the projected increase in site-related population to estimate the revenue increases from these sources under each reuse alternative.

The remaining revenue sources of the counties and municipalities, principally property taxes and sales taxes, were estimated based on the change in the tax base resulting from closure or reuse (e.g., taxable retail sales and assessed values) and the tax rate associated with that tax source (e.g., the applicable sales tax rate or property tax rate of each jurisdiction). Because the project area is assumed to be declared a redevelopment project by the IVDA under the Proposed Action, the estimated direct increase in property taxes was assumed to accrue directly to IVDA. The recent increase in the state sales tax rate from a basic rate of 6.00 percent to 7.25 percent would not affect local revenues, as the additional funds collected will go directly to the state's general fund. San Bernardino County collects an additional 0.5 percent for transportation projects, but these funds are not available to support general local government operations.

Similarly, per-pupil rates (over the most recent 3- to 5-year period) were calculated for those school district revenue sources assumed to increase (or decrease) with changing enrollment levels (revenue limit source revenue, other state and local revenues, and federal sources other than P.L. 81-874 program revenues). Changes in enrollments (again from 1988 levels) were multiplied by these rates to estimate the increase or decrease in these

revenue sources. P.L. 81-874 program revenues were assumed to be lost in their entirety and not offset by other revenue sources during reuse.

Similar to the revenue analysis, expenditure impacts were estimated for each major general fund and, as applicable, special revenue fund expenditure categories as listed in each jurisdiction's financial reports. Average per-capita rates were calculated for each function and the estimated change in population due to reuse was multiplied by these rates to estimate expenditure impacts. (Due to the expected growth from non-base-related activities in the ROI, closure of the base is not expected to result in a major reduction of outlays from preclosure levels.) Some economies of scale were assumed to exist in the provision of some services such as general government and administrative services, and rates for these functions were reduced from post-closure levels to account for these economies. The level of the potential savings due to economies of scale in the provision of these services was assumed to be greater for municipalities and counties than for school districts. For school districts, administration and support service expenditure rates were reduced to 80 percent of their post-closure rates as an initial approximation of these savings. For municipalities and counties, general government outlays were reduced to 10 percent of post-closure rates.

The net fiscal effect is the difference between the projected increase (or decrease) in revenues minus the projected increase (or decrease) in expenditures.

In the absence of a redevelopment agency, the county government would receive all property taxes due on the land and improvements. These tax revenues are then shared by the county government, school districts, and other local jurisdictions. Property tax funds available to school districts in this fashion are available to support both operating expenses and capital improvement programs.

Redevelopment agencies are not required to support local school district budgets out of agency property tax receipts. School districts have the option, however, to negotiate with local redevelopment agencies to establish trust funds for capital improvements based on a portion of incremental property taxes. The nature of any such agreements is at the discretion of the school districts and redevelopment agencies. Agreements have been made between the IVDA and the San Bernardino City USD, the Colton Joint USD, the Redlands USD, and the San Bernardino Community College District. These agreements, however, are subject to the favorable resolution of legal actions undertaken by the city of Redlands in connection with adoption of the IVDA Redevelopment Plan. (Legal actions by the potentially affected school districts have already been resolved.) Under these agreements, the IVDA is to remit to these districts, on an annual basis, a portion of the incremental property tax revenues generated within

the project area. Over a 40-year period (FY 1990 to FY 2030), the total amount remitted is estimated to range from about \$9 million (to the Colton Joint USD) to \$176.1 million (to the San Bernardino City USD). These monies would be restricted for use for property and facility acquisition and would not be available for direct instructional or other direct operations costs.

State support of local school districts in California is concentrated on assistance in financing operating expenses. State funding formulas are designed to make up any shortfalls in local district property tax revenues. Hence, allocation of increased property taxes to redevelopment agencies, which are not required to support school district budgets, would mean that any future operating budget shortfalls experienced by school districts would, under current law, be compensated by state funding up to the base revenue limit amounts. The state is not, however, required to make up any shortfalls in local district capital budgets. Therefore, allocation of property taxes to redevelopment agencies instead of to county governments can be expected, in the absence of specific agreements, to reduce capital funds available to affected school districts.

### **3.3.6 Other Relevant Resources**

**Transportation.** The transportation network of the Riverside-San Bernardino area was examined to identify potential impacts to levels of service (LOS) arising from post-closure conditions and effects of alternative reuse scenarios. Changes in traffic volumes and LOS ratings were projected for road segments. LOS ratings were established for the city of San Bernardino based on *Highway Capacity Manual* (HCM) recommendations (Transportation Research Board, 1985).

Depending on the data base available, traffic volumes typically are reported as either the daily number of vehicular movements in both directions on a segment of roadway averaged over a full calendar year (average annual daily traffic [AADT]) and/or the number of vehicular movements on a road segment during a peak period (in general, peak hour). In urban areas, the average peak-hour volume typically is about 10 percent of the AADT (Transportation Research Board, 1985). These values are useful indicators in determining the extent to which the roadway segment is used and in assessing the potential for congestion and other problems.

Traffic flow conditions on roadway segments are generally reported in terms of LOS, rating factors that represent the general freedom of movement on roadways (Table 3.3-3). The LOS scale ranges from A to F, depending upon the volume-to-capacity ratio; with low-volume, high-speed, free-flowing conditions classified as LOS A. LOS E is representative of conditions that, although not favorable from the point of view of the motorist, provide the

**Table 3.3-3. Road Transportation Levels of Service**

Level of Service	Volume/Capacity Ratio	Operating Conditions
A	0-.39	Free flow; speed controlled by driver's desires, speed limits, or physical roadway conditions.
B	.40-.54	Stable flows; operating speeds beginning to be restricted; little or no restrictions on maneuverability from other vehicles.
C	.55-.69	Stable flow; speeds and maneuverability more closely restricted.
D	.70-.84	Approaches unstable flow; tolerable speeds can be maintained, but temporary restrictions to flow cause substantial drops in speed. Little freedom to maneuver; comfort and convenience low.
E	.85-.99	Volumes near capacity; flow unstable; stoppages of momentary duration. Ability to maneuver severely limited.
F	1.00 +	Forced flow; low operating speeds; volumes above capacity, queues form.

Source: City of San Bernardino 1988.

greatest traffic volume per hour. With minor interruptions, LOS E will deteriorate to LOS F (Transportation Research Board, 1985). As traffic volumes increase, free-flow conditions become restricted and LOS deteriorates. LOS F represents breakdown, stop-and-go conditions. Levels of service generally are evaluated and reported for typical clear-weather conditions.

Traffic flow conditions usually are most congested during morning and evening peak periods and depend on the physical characteristics of the roadway, traffic volumes, traffic composition, and other environmental factors. A common design goal is to provide LOS no lower than C or D. A typical four through-lane major arterial has a daily capacity of 40,000 vehicles (passenger car equivalents [PCE]). Each lane of an interstate highway provides a daily capacity of 16,000 to 20,000 PCE. LOS ratings presented in this study were based on daily traffic volumes and capacities for key roadways. Intersections along key roads were examined for capacity deficiencies and adequacy of space for turning vehicles and through traffic under the projected volumes. Typically, a signalized intersection of two lanes per approach could handle 30,000 to 40,000 daily vehicles at all approaches (based on a broad planning criteria of 450 vehicles per hour per lane [Transportation Research Board, 1985]).

Project-generated trip ends were computed using the number of employees, dwelling units, commercial air passengers, general aviation flights, and other activities for respective proposed land uses. Project-generated traffic was

then added to the forecasted non-project-generated traffic (ambient) to determine total AADT traffic volumes for all key roads. The LOS for each key road was then determined by calculating the volume/capacity ratio. Those portions of the transportation system on which LOS is projected to decline to LOS F were assumed to be upgraded to support LOS E or better. These improvements were assumed to be part of the reuse alternative under analysis.

The effects of closure on air transportation were found by subtracting current enplanements generated by the Air Force at the local community airport from current total enplanements to produce closure enplanements. The effects of reuse on local airports were determined by multiplying the non-military-generated enplanements to non-military population ratio by projected future populations of the local airport service area.

The effects of reuse alternatives on railroad transportation were based on projected populations, using current passenger to population ratios.

**Utilities.** The utility systems addressed in this analysis include the facilities and infrastructure used for:

- Potable water pumping, treatment, storage, and distribution
- Wastewater collection and treatment
- Solid waste collection and disposal
- Energy generation and distribution, including the provision of electricity, natural gas, and steam heating.

Projections of changes in future utility demand associated with closure and reuse of Norton AFB were estimated for residual base operation, closure conditions, and for reuse alternatives.

Long-term projections were obtained from the various utility purveyors in the Riverside-San Bernardino area (through at least 2010) for each of their respective service areas. These projections extrapolated to the year 2015 were prepared by each of the utility purveyors (or the California Energy Commission for electricity and natural gas) in conjunction with forecasts of future population, employment, and acreage of various types of land uses, as well as numerous other factors. Each utility purveyors' projection was then used to derive their implicit future rates of per-capita utility demand. It was assumed that the population change associated with the Proposed Action and alternatives would have about the same average per-capita utility demands as those implicit in the future utility purveyor projections. Each utility purveyor implicitly or explicitly indicated that future demands could readily be accommodated and that future expansion projects are in the

works to meet the demands of a growing population. None of the purveyors foresee interruptions in services as an area of concern.

The long-term projections were adjusted to reflect the decrease in demand associated with closure of Norton AFB and its subsequent operation under caretaker status. (For each utility, the most recent comprehensive projections available were made prior to the base closure announcement and/or did not take into account a change in demand from the base.) The adjustments were made using the future per-capita rates and the forecast of population change resulting from base closure. These adjusted long-term projections were then considered as post-closure conditions for comparison with potential reuse alternatives.

Forecasts of direct and indirect population changes for the Proposed Action and each alternative were multiplied by the future per-capita utility demand rate to determine the net and total effects to each purveyor's adjusted long-term demand projections. These forecasts of future utility demand include both on-site Norton AFB activities planned under the Proposed Action and alternatives, as well as resulting increases in domestic demand associated with direct and indirect population changes within the entire service area of each utility purveyor. Demand estimated from per-capita consumption levels represents a probable mid-point of a range that could vary considerably depending on the actual reuse of the base. The limits of this range are discussed qualitatively to indicate this possible variance. The potential effects of reuse alternatives were evaluated by comparing the additional direct and indirect demand associated with each alternative to the existing and projected operating capabilities of each utility system. Interruptible service is also considered in the analyses.

For the reuse alternatives, local purveyors of potable water, wastewater treatment, and energy were anticipated to provide services within the area of the existing base, and these entities would acquire most or all related on-base utilities infrastructure. It was also assumed that reuse activities would generate solid wastes that would be disposed of in area landfills. For water supply issues, the potential effects of groundwater overdraft on private wells off site are assessed.

**Airspace.** Airspace is defined as a four-dimensional resource (reflecting potential uses over time of an area having length, width, and height).

Opportunity cost is incurred when use of airspace by one precludes use of the same airspace by another user. For example, in the absence of flying operations, a property owner may opt to construct a ten-story office building on the property. If a runway were built close to the property, its utility as a place to build a high-rise office complex would be lost. The value of property located in a high noise contour could be reduced. Similarly, recreational uses of airspace may conflict with other airspace uses like

commercial aircraft operations. Sometimes one type of commercial operation interferes with another, resulting in scheduled air traffic delays and accidents.

The availability and use of airspace may have possible positive spillover effects on some property values, as is the case for commercial and industrial properties near major commercial airports complementing airport operations.

Discussion of the economic impacts of airspace use in this section are limited to:

- The Proposed Action or alternatives which would eliminate or severely limit noncommercial uses of airspace
- The Proposed Action or alternatives which could affect instrument and visual flight operations of commercial, noncommercial, and government air traffic
- Construction, property use, and other commercial activities that would be affected
- The positive economic spillover impacts on the Proposed Action and alternatives.

Also, economic effects are considered to include changes in the utility of airspace directly or indirectly related to changes at Norton AFB. Particular attention was concentrated on the following standards of measure applied to closure and all reuse alternatives:

- Current airspace regulatory requirements which might be relaxed or efficiency gains which that occur if Norton AFB was reused for non-aviation purposes only
- Changes in operating procedures or regulations that may eventually be necessary to accommodate increased airspace use attributable to reuse of Norton AFB as an operating public airport
- Possible competition with other air operations from aviation reuse of Norton AFB
- Any possible cumulative impacts from George AFB closure and reuse
- Lost opportunities to non-aviation uses.

Interview responses were evaluated to provide a comparative and qualitative assessment of efficiency gains or losses and possible economic competition among airspace users for each alternative.

### **3.4 AFFECTED ENVIRONMENT**

This section presents recent socioeconomic trends in the region (preclosure conditions), and outlines the impacts of base closure (closure conditions) for comparison with projected conditions under each of the alternative reuse scenarios. Of particular importance in this analysis are "site-related" effects of closing Norton AFB. Site-related effects are defined to include both the direct on-site and secondary off-site effects due to activities occurring on the base. Unless otherwise stated, the results presented in the following sections represent the reduction in "site-related" employment, population, housing, public services, and public finance variables due to base closure. For example, reduced site-related population in the ROI due to base closure refers to the number of persons who would out-migrate from the ROI because of the loss of both direct jobs on the base and the secondary off-site employment effects. When taken in context with other non-base-related growth, however, this out-migration may simply result in a reduced rate of growth in the overall population within the ROI. This distinction is discussed, as appropriate, in each of the resource-specific sections.

Direct and secondary employment from current Norton AFB operations is expected to decline over the period from the early part of 1992 through the spring of 1994. By that time, with the exception of about 1,000 direct personnel associated with the BMO and their contracting work force (TRW, as an example) who will be staying in the area, all personnel will be transferred from the base or will have had their jobs eliminated. Technically, the BMO (almost 540 military and 480 civilian personnel) will be supported by March AFB, although the physical location of their workplace will remain at Norton. Moreover, 1,150 personnel in other organizations will be transferred to March AFB, including more than 550 civilian jobs. Therefore, since March AFB is located in the ROI, only the remaining base operations (exclusive of BMO and the transfers to March AFB) would represent a decline in regional economic activity. This decline would amount to about 12,600 direct and secondary jobs (Table 3.4-1). Beginning in mid-1994, about 50 jobs associated with the DMT would support approximately 20 secondary jobs in the region.

Local and regional population would decline more than 18,000 from 1987 to March 1994. This population impact does not include the direct workers and their families that would remain in the region because of reassignment to March AFB, nor does it include any portion of the secondary work force that depends on the economic activity afforded by these reassigned workers. Accordingly, population-related impacts to housing, public services, and public finance are only related to the 18,000 persons expected to depart the ROI. Off-base housing demand, for instance, would decrease by approximately 6,350 units as a result of base closure.



**Table 3.4-1. Impacts of Closure of Norton AFB**

<b>Resource Category</b>	<b>Closure Impacts</b>
<b>Economic Activity</b>	
Employment	Decline of approximately 12,600 direct and secondary jobs from 1987 to closure in the ROI.
Earnings (1990 Dollars)	Decline of almost \$300 million/year from 1987 to closure in the ROI.
<b>Population</b>	
Military-related	Decline of more than 14,400 people from 1987 to closure in the ROI.
Civilian-related	Decline of almost 3,800 people from 1987 to closure in the ROI.
<b>Housing</b>	Decline in demand of approximately 6,350 units from 1987 to closure in the ROI.
<b>Public Services</b>	
General Government, Police and Fire San Bernardino County	Decline in population served of about 15,500 from 1987 to closure.
City of San Bernardino	Decline in population served of about 5,150 from 1987 to closure.
Education	Decline in regional enrollments of approximately 4,000 students from 1987 to closure.
Health	Norton AFB clinic closed.
<b>Public Finances (1990 Dollars)</b>	
San Bernardino County	Shortfalls of \$7.6 million per year.
City of San Bernardino	Shortfalls of \$1.5 million per year.
San Bernardino City USD	Shortfalls of \$600,000 per year.
City of Redlands	Shortfalls of \$700,000 per year.
Redlands USD	Shortfalls of \$100,000 per year.
City of Highland	Shortfalls of \$180,000 per year.
City of Loma Linda	Shortfalls of \$270,000 per year.
City of Colton	Shortfalls of \$200,000 per year.
<b>Other Relevant Resources</b>	
Transportation	Base-related traffic reductions on local roads overshadowed by projected increases in area population from other sources.
Utilities	Projected growth in demand for water, wastewater treatment, solid waste disposal, and energy would be 1 to 2 percent lower than local forecasts.

**Note:** Although Norton AFB is scheduled to close in March 1994, data limitations required that most impacts be calculated annually. Because 1995 is the first full calendar year following closure, short-term impacts were calculated through that year.

All major Air Force operations at Norton AFB, except BMO, would cease with base closure. Jurisdiction over and minimal maintenance of the base area would remain under the charge of the federal government. Under the base closure scenario, potential impacts to public services in the region would result solely from changes in regional population associated with activity at the base, and not from increased public service provision areas arising from conveyance of base property. By 1995, demand for public services directly related to operations at Norton AFB would be greatly reduced.

Revenue shortfalls are projected for local jurisdictions (see Table 3.4-1). The greatest impact due to base closure would be to the county of San Bernardino, with shortfalls projected to be about \$7.6 million annually. Other jurisdictions expected to experience sizable shortfalls include the city of San Bernardino (\$1.5 million per year), the city of Redlands (\$700,000 per year), and the San Bernardino City USD (\$600,000 per year). This assumes no offsetting actions occur such as increases in tax and non-tax revenue schedules and/or a lowering of service levels.

Short-term reductions in area traffic and utility demands would accompany base closure, but these reductions would be small in comparison to demand increases expected to accompany forecasted growth in population of the area during the next two decades.

### **3.4.1 Economic Activity**

#### **Recent Trends**

**Jobs.** The number of full- and part-time jobs within the ROI (Riverside-San Bernardino PMSA) totaled about 856,000 in 1988. This key measure of regional economic activity grew between 1970 and 1988 at a rate nearly double the national average. Annual job growth averaged 4.2 percent in the two-county region during this period, while the number of jobs in the United States increased at an average rate of 2.2 percent during the same period (Table 3.4-2).

**Military Sector.** The percentage of total jobs provided by the military sector in the ROI historically has been about twice as high as the respective percentage for the nation, although the military sectors for both the county and the nation have decreased steadily between 1970 and 1988. In 1988, ROI military jobs stood at about 35,000 or 4.1 percent of the ROI total. By comparison, military jobs comprised 8.4 percent of all ROI jobs in 1970. Two factors have contributed to the decrease in the region's share of military employment: (1) the number of military jobs increased only slightly from 34,200 in 1970 to 34,800 in 1988, while (2) over the same period there was a substantial increase in non-military jobs from 374,900 in 1970 to 821,300 in 1988 (non-military jobs include both private jobs and civilian

**Table 3.4-2. Summary of Economic Indicators, Riverside-San Bernardino Primary Metropolitan Statistical Area (PMSA) and United States**

	1970	1980	1988	Average Annual % Change
<b>San Bernardino County</b>				
Total Jobs (000)	242	338	480	3.9
Civilian (000)	218	318	452	4.1
Military (000)	24	20	28	0.7
Military, % of Total	10.1	5.9	5.8	-
Civilian Labor Force (000)	NA	336	542	6.2
Unemployment Rate (%)	NA	7.3	5.1	-
Earnings Per Job (1990\$)	25,196	23,586	24,181	-0.2
Per-Capita Income (1990\$)	13,238	15,376	16,730	1.3
<b>Riverside County</b>				
Total Jobs (000)	167	257	376	4.6
Civilian (000)	157	251	369	4.9
Military (000)	10	6	7	-1.8
Military, % of Total	5.9	2.3	1.9	-
Civilian Labor Force (000)	NA	251	415	6.5
Unemployment Rate (%)	NA	8.3	6.7	-
Earnings Per Job (1990\$)	24,254	21,790	22,947	-0.3
Per-Capita Income (1990\$)	14,717	16,837	18,036	1.1
<b>Riverside-San Bernardino PMSA</b>				
Total Jobs (000)	409	595	856	4.2
Civilian (000)	375	569	821	4.5
Military (000)	34	26	35	0.1
Military, % of Total	8.4	4.4	4.1	-
Civilian Labor Force (000)	NA	586	957	6.3
Unemployment Rate (%)	NA	7.6	5.8	-
Earnings Per Job (1990\$)	24,812	22,810	23,639	-0.3
Per-Capita Income (1990\$)	13,834	15,998	17,296	1.2
<b>United States</b>				
Total Jobs (000)	89,753	112,257	132,503	2.2
Civilian (000)	86,521	109,806	129,732	2.3
Military (000)	3,232	2,451	2,771	-0.9
Military, % of Total	3.6	2.2	2.1	-
Civilian Labor Force (000)	82,771	106,940	121,669	1.6
Unemployment Rate (%)	4.9	7.1	5.5	-
Earnings Per Job (1990\$)	24,687	23,810	24,798	0.0
Per-Capita Income (1990\$)	13,646	15,733	18,218	1.6

Notes: Jobs are full- and part-time civilian and military employment by place of work. Civilian labor force and unemployment rate are by place of residence. Earnings and income are in constant 1990 dollars. Average annual percent change is shown for period covering the earliest and most recent years of available data.

Sources: U.S. Bureau of Economic Analysis, 1990a; U.S. Council of Economic Advisors, 1991.

jobs within federal, state, and local governments). The slight increase in the number of military jobs in the ROI during the past two decades ran counter to the national trend, where military jobs have decreased by 0.9 percent annually during the same period.

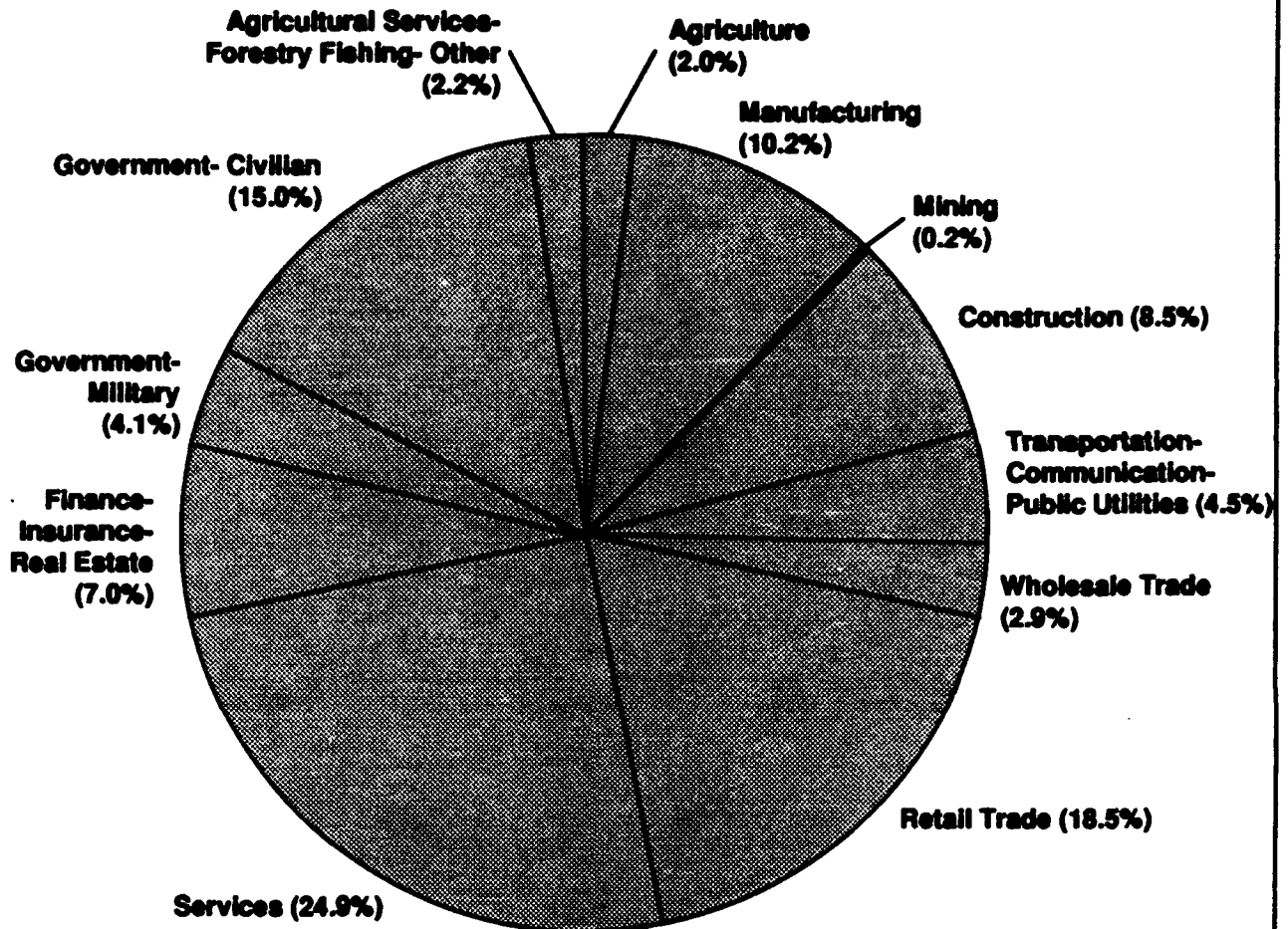
**Jobs by Major Sectors.** The major employment sectors within the two-county ROI are services, government, retail trade, manufacturing, and construction (Figure 3.4-1). Services provided approximately 213,000 jobs, which was nearly one-fourth of total employment in the two-county region in 1988. Government, including both the civilian and military sectors, provided over 163,000 jobs, which was nearly one-fifth of all jobs in the region. There were also more than 158,000 retail trade jobs and about 87,000 manufacturing jobs within the two counties in 1988.

**Earnings and Income.** Average annual earnings per job and per-capita personal income in the ROI were lower than the national average rates in 1988. Real per-capita income in these counties was about \$17,300 in 1988, up from approximately \$13,800 in 1970. A comparison of average 1980-1988 earnings per job by sector indicates that jobs in the mining sector have earning levels higher than the average for other sectors. Average earnings per job in the transportation-public utilities, construction, and agricultural sectors of the two-county economy were the next highest; jobs in the retail trade, agricultural services-forestry-fishing-other, and finance-insurance-real estate sectors had the lowest average earnings per job. Earnings per job declined in most sectors of the region's economy between 1970 and 1988, although in more recent years the overall trend has been slightly upward.

**Norton AFB.** Direct employment decreased at Norton AFB during the past 4 fiscal years (see Section 2.2 for a detailed discussion of Norton AFB employment, earnings, and goods and services procurement effects on the regional economy).

Decreased base spending for regional goods and services procurements likely caused secondary employment declines of about 640 jobs in the region between FY 1987 and FY 1990. While estimates shown in Chapter 2 indicate very little change in base payroll has occurred during this period, direct and secondary regional earnings levels have declined, in real terms, by more than \$37 million (Table 3.4-3) in constant 1990 dollars. Although much of the existing work force at Norton AFB will be transferred to other bases outside the region, about 1,000 military and civilian positions associated with the BMO (as well as their contractor work force) will remain active in the regional economy at Norton AFB after closure. Spending in the region by BMO, primarily in the form of major engineering contracts with firms such as TRW, is anticipated to continue at about the same average level as it has been for the past 4 fiscal years (about \$540 million annually) although annual fluctuations can be expected. An additional 1,150

# **Major Industrial Sectors, 1988** **Total Employment = 856,106**



Source: U.S. Bureau of Economic Analysis, 1990a.

ROI (Region of Influence) is Riverside-San Bernardino PMSA, consisting of Riverside and San Bernardino counties, California.

## **Distribution of ROI Jobs by Major Industrial Sectors, 1988**

**Figure 3.4-1**

Table 3.4-3. Site-Related Employment and Earnings Projections (in constant 1990 dollars)  
Page 1 of 2

	1987	1988	1989	1990	1991	1992	1993	Closure*
<b>Base Operation</b>								
Employment	12,619	11,466	10,793	10,383	10,383	7,293	4,019	70
Direct	9,403	8,571	8,215	7,808	7,808	5,484	3,022	50
Secondary	3,216	2,895	2,578	2,575	2,575	1,809	997	20
ACS	1,867	1,706	1,586	1,542	1,542	1,083	597	13
Rest of ROI	1,349	1,189	992	1,034	1,034	726	400	7
Earnings (\$000)	290,134	273,253	259,607	252,772	252,772	177,538	97,846	1,623
Direct	219,561	209,723	203,014	195,860	195,860	137,565	75,816	1,209
Secondary	70,572	63,530	56,593	56,912	56,912	39,973	22,030	414
<b>BEA Estimates and SCAG Trend Projection</b>								
<b>Riverside-San Bernardino PMSA</b>								
Employment (est)	815,338	856,106	NA	NA	NA	NA	NA	NA
Employment (proj)	NA	NA	888,329	920,552	952,774	984,997	1,017,220	1,081,666
<b>BEA Forecast Adjustment for George AFB Closure</b>								
Employment (Annual)	8,925	8,792	8,563	7,172	5,386	2,059	68	68
Employment Loss (Cumulative)	0	(133)	(362)	(1,753)	(3,540)	(6,867)	(8,858)	(8,858)
<b>BEA Forecast Adjustment for Norton AFB Closure</b>								
Employment (Annual)	12,619	11,466	10,793	10,383	10,383	7,293	4,019	70
Employment Loss (Cumulative)	0	(1,154)	(1,826)	(2,236)	(2,236)	(5,326)	(8,600)	(12,550)

Socioeconomic Impact Analysis Study for Norton AFB

Table 3.4-3. Site-Related Employment and Earnings Projections (in constant 1990 dollars)  
Page 2 of 2

	1987	1988	1989	1990	1991	1992	1993	Closure*
<b>Closure of George AFB and Norton AFB</b>								
Employment (annual)	21,545	20,258	19,356	17,556	15,769	9,352	4,087	137
Employment loss (cumulative)	0	-1,287	-2,188	-3,989	-5,776	-12,193	-17,458	-21,407
Adj BEA projection without both bases	NA	NA	886,141	916,563	946,999	972,804	999,763	1,080,258

\*Closure represents March 1994 conditions.

**Notes:**

Site-related refers to direct and secondary employment and earnings effects of Norton AFB closure (excluding BMO and its contractors e.g., TRW). U.S. Bureau of Economic Analysis total employment estimates for 1987 and 1988 combined with SCAG employment growth rates were used to develop total employment projection in ROI; adjustments were then made to the forecast for base closure of George and Norton AFBs. Historic data from Economic Resource Impact Statements regarding base employment and earnings from 1987 to 1990 were actually for fiscal years; the data were assumed to correspond closely with actual employment and earnings for calendar years.

Other Direct Regional Jobs. The following estimated FY 1991 jobs will remain in the region. The direct and secondary employment and earnings effects from these jobs are not included in the base operation projections shown above.

BMO, Total Remaining at Norton AFB: 1,020  
 Military 541  
 Civilian 479  
 Total Reassignment to March AFB: 1,150  
 Military 598  
 Civilian 552

NA = Not applicable.

Sources: U.S. Air Force, 1988, 1989b, 1990b, 1991b; SCAG, 1989b; U.S. Bureau of Economic Analysis, 1990a; projections developed for this study, 1991.

personnel from other organizations will be realigned to March AFB in Riverside County. The direct and secondary regional base operation impacts shown in Table 3.4-3 do not include regional impacts from existing base activities that will continue to operate within the region, either from the present site of Norton AFB or from March AFB, after the planned realignment occurs. As of 1991, Lockheed aircraft refurbishment activities at Norton AFB consisted of approximately 100 jobs, and company officials have indicated that expansion to as many as 1,500 jobs could occur by 1994.

#### Impacts of Closure

Norton AFB employment levels will continue to decline through 1994 as the drawdown of personnel at the base continues (Table 3.4-3 and Figure 3.4-2). From 1987 to closure, the 9,400 military and civilian positions either transferred out of the regional economy or phased out would cause an indirectly related decrease of 3,200 additional secondary regional jobs. Assuming that Lockheed's lease is terminated due to base closure, the 100 or more jobs associated with that operation also would relocate.

The Riverside-San Bernardino PMSA totals presented at the bottom of Table 3.4-3 are primarily based on the employment growth rate associated with a forecast prepared by SCAG (1989b). The forecast anticipates rapid employment growth in the region, and although it accounts for numerous unspecified developments in the area, it does not incorporate changes associated with base closures or transfer of personnel to bases outside the region. Therefore, the forecast has been adjusted for this study, first by subtracting the direct and indirect employment declines expected due to the closure of George AFB in Victor Valley, approximately 35 miles north of Norton AFB, and second by subtracting the direct and secondary employment decreases associated with the closure of Norton AFB. The direct and secondary effects of both BMO and those personnel that will be realigned to March AFB, as well as the economic activity associated with Lockheed's regional operations, are already inherently included in the SCAG growth rates for the region; so these activities necessitated no adjustments to the forecast to produce the projection shown in Table 3.4-3.

By closure, direct and secondary regional earning levels will decline by \$290 million. Norton AFB would be retained by the federal government in a caretaker status for an indefinite period of time following the drawdown of residual operation of the base, which will be completed in 1994. It was estimated that 50 direct jobs and related procurements for small amounts of goods and services would generate 20 secondary jobs in the regional economy. Direct earnings levels were assumed to be \$1.2 million annually with local secondary earnings of \$400,000 annually.





Sources:  
U.S. Air Force, 1988; 1989;  
1990b; 1991b; SCAG, 1989b;  
and projections developed  
for this study, 1991.

#### EXPLANATION

- Caretaker Operations
- ROI Direct Employment
- ROI Secondary Employment
- Actual & Closure Projection (Actual 1987; Projection 1988-1995)
- SCAG Forecast (Assumed No Base Closure)

Note: Closure represents June 1994 conditions.

#### ROI Base-Related and Total ACS Employment Projections

**Figure 3.4-2**

### 3.4.2 Population

#### Recent Trends

Final 1990 census counts indicate that population within the ROI increased at an average annual rate of 5.2 percent over the preceding decade (Table 3.4-4). The rapid population growth witnessed during the 1980s in this region was greater than the average annual increase experienced during either the 1970s (3.2 percent) or the 1960s (3.5 percent). Substantial population increases occurred in both counties within the ROI between 1980 and 1990, with the growth rate of Riverside County exceeding that of San Bernardino County.

**Table 3.4-4. Population Trends for San Bernardino and Riverside Counties:  
1950-1990**

	San Bernardino County	Riverside County	2-County ROI
<b>Population</b>			
1950	281,642	170,046	451,688
1960	503,591	306,191	809,782
1970	682,233	456,916	1,139,149
1980	895,016	663,166	1,558,182
1990	1,418,380	1,170,413	2,588,793
<b>Average Annual Growth Rate (%)</b>			
1950-60	6.0	6.1	6.0
1960-70	3.1	4.1	3.5
1970-80	2.8	3.8	3.2
1980-90	4.7	5.8	5.2

Sources: U.S. Bureau of the Census, 1982a, 1991.

The populations of the five ACS communities examined in this study also grew rapidly between 1980 and 1990 (Table 3.4-5). Sustained population growth occurred in the cities of San Bernardino and Redlands throughout the decade. However, it was the three remaining smaller communities that experienced the most dramatic growth. Highland in particular witnessed a substantial population increase between 1980 and 1990, with the number of inhabitants more than tripling. The population of Colton, in turn, nearly doubled over the same time period (City of Colton, 1987), while Loma Linda's population increased by more than 60 percent.

**Table 3.4-5. Population Trends for ACS Communities in the Norton AFB ROI**

Community	Population		Average Annual Rate of Change (%)
	1980	1990	1980-90
San Bernardino	117,490	164,164	3.4
Redlands	43,619	60,394	3.3
Highland	10,908	34,439	12.2
Loma Linda	10,694	17,400	5.0
Colton	21,310	40,213	6.6

Sources: U.S. Bureau of the Census, 1982a, 1991.

Sustained population growth in the ROI is anticipated to continue in the near future. The population increases presently being experienced in Riverside and San Bernardino counties are projected to slow slightly during the 1990s (California Department of Finance, 1986, 1991). Continued population growth is linked to continued in-migration to each of these counties (San Bernardino County, 1990b). Steady population growth also is likely to occur in the five communities considered in this study, despite growth controls that have been implemented in certain communities (City of Redlands, 1988).

#### Impacts of Closure

Under closure conditions, total site-related population residing in the ROI due to activities associated with Norton AFB would decline from more than 12,200 in 1990 to zero by closure (Table 3.4-6). Reductions are projected both for civilian (including contract) and military personnel associated with the installation. More than 83 percent of the site-related population loss in the ROI as a consequence of base closure would occur in San Bernardino County. Population losses in Riverside County consequently would be much less both in absolute and relative terms.

The main impact of these site-related population declines would be a relatively small reduction in projected baseline growth. Including the effects associated with closure of George AFB, the total ROI population still is projected to grow to 2,976,700 persons by the time both bases are closed, rather than the original projection of 3,007,900 persons (Table 3.4-6).

#### **3.4.3 Housing**

##### Recent Trends

As with population, the number of housing units within the Norton ROI increased steadily throughout the region during the 1980s. Sustained

Table 3.4-6. Site-Related Regional Population Projections

	1987	1988	1989	1990	1991	1992	1993	Closure
San Bernardino County	15,462	11,560	10,782	10,152	9,338	6,872	4,266	0
San Bernardino	5,148	3,807	3,543	3,321	3,039	2,169	1,251	0
Redlands	4,022	2,925	2,704	2,523	2,288	1,620	914	0
Highland	1,080	799	743	697	637	455	282	0
Loma Linda	1,159	843	779	727	659	467	263	0
Colton	587	435	405	380	348	253	153	0
Rest of County	3,466	2,752	2,607	2,504	2,366	1,907	1,423	0
Riverside County	2,748	2,236	2,131	2,062	1,968	1,634	1,281	0
Total	18,211	13,796	12,913	12,214	11,305	8,506	5,548	0
U.S. Census estimates and SCAG Trend Projection								
Riverside-San Bernardino FMSA	2,131,500	2,277,600	2,433,197	2,588,793	NA	NA	NA	NA
Population (est)					2,672,612	2,756,430	2,840,249	3,007,887
Population (proj)	NA	NA	NA	NA	NA	NA	NA	NA
BEA Forecast Adjustment for George AFB closure								
Population (Annual)	13,000	13,000	17,910	14,635	11,519	4,716	0	0
Population decline (Cumulative)	0	0	4,910	1,634	(1,482)	(8,284)	(13,000)	(13,000)
BEA Forecast Adjustment for Norton AFB closure								
Population (Annual)	18,211	13,796	12,913	12,214	11,305	8,506	5,548	0
Population decline (cumulative)	0	(4,415)	(5,297)	(5,996)	(6,905)	(9,704)	(12,663)	(18,211)
Closure of George and Norton AFBs*								
Population (Annual)	31,211	26,796	30,824	26,849	22,824	13,222	5,548	0
Population decline (cumulative)	0	(4,415)	(387)	(4,362)	(8,387)	(17,988)	(25,663)	(31,211)
BEA adj projection w/o both bases	NA	NA	NA	NA	2,664,225	2,738,442	2,814,586	2,979,676

\* Closure represents March 1994 conditions.

Sources: U.S. Air Force, 1988, 1989b, 1990b, 1991c; SCAG, 1989b; U.S. Bureau of Economic Analysis, 1990a; U.S. Bureau of the Census, 1991.  
NA = Not applicable.

growth in the inventory of housing units occurred in both Riverside and San Bernardino counties. The housing stock in Colton and (especially) Highland grew very rapidly between 1980 and 1990. The proportion of housing composed of multi-family units increased, particularly structures containing five or more units.

Vacancy rates in the ROI in 1990 averaged 15.5 percent (Table 3.4-7). This was a substantial increase from the range of vacancies (4.7 percent for owners, 9.4 percent for renters) observed in the ROI in 1980. The increase in vacancies reflects the substantial amount of new construction that took place during the decade, as well as the slowdown in the southern California housing market in 1990. Vacancy rates in 1990 in the ACS communities ranged from 5.2 percent to 9.9 percent, well below the ROI average.

**Table 3.4-7. Housing Units and Vacancies for the Norton AFB ROI: 1980, 1990**

Area	1980				1990		1980-1990
	Total Housing Units	Year-Round Units	Owner Vacancy Rate <sup>(a)</sup> (%)	Renter Vacancy Rate <sup>(a)</sup> (%)	Total Housing Units	Total Vacancy Rate <sup>(a)</sup> (%)	Average Annual Rate of Change <sup>(b)</sup> (%)
<b>San Bernardino County</b>	<b>370,155</b>	<b>366,136</b>	<b>4.5</b>	<b>9.2</b>	<b>542,332</b>	<b>14.3</b>	<b>3.9</b>
San Bernardino	46,458	46,428	3.9	8.7	58,804	7.3	2.4
Redlands	17,144	17,137	5.5	7.6	23,189	5.2	3.1
Highland	3,834	3,833	2.7	10.5	12,562	9.9	12.6
Loma Linda	4,583	4,582	12.9	3.7	6,524	7.7	3.6
Colton	8,304	8,303	8.2	11.2	14,767	8.8	5.9
<b>Riverside County</b>	<b>295,043</b>	<b>291,783</b>	<b>5.0</b>	<b>9.6</b>	<b>483,847</b>	<b>16.9</b>	<b>5.1</b>
<b>ROI</b>	<b>665,198</b>	<b>657,919</b>	<b>4.7</b>	<b>9.4</b>	<b>1,026,179</b>	<b>15.5</b>	<b>4.4</b>

Notes: (a) For year-round units  
 (b) For total housing units  
 (c) Estimated based on weighted average

Sources: U.S. Bureau of the Census, 1982b, 1991.

In 1980, housing costs in San Bernardino County were slightly lower than those in Riverside County, with the proportion of owner-occupied units identical in both counties (Table 3.4-8). Housing costs increased substantially over the ensuing decade in both counties, with those in Riverside County remaining slightly higher. The percentage of units occupied by owners declined in both counties, more so in San Bernardino County. Housing tenure characteristics and costs were similar throughout the five ACS communities in 1980 with the exception of Loma Linda, where housing values were slightly higher than elsewhere in the ROI and the proportion of units occupied by owners was much less. Housing costs

**Table 3.4-8. Housing Tenure, Median Value, and Median Contract Rent for the Norton AFB ROI: 1980, 1990**

Area	1980			1990		
	Percent Owner Occupied	Median Value <sup>(a)</sup>	Median Contract Rent <sup>(b)</sup>	Percent Owner Occupied	Median Value <sup>(c)</sup>	Median Contract Rent <sup>(d)</sup>
San Bernardino County	68.4	63,000	221	63.3	129,200	489
San Bernardino	59.4	51,600	195	52.3	96,200	422
Redlands	66.0	72,000	239	59.2	144,300	527
Highland	73.1	52,700	215	61.1	103,300	444
Loma Linda	44.4	77,000	220	45.8	153,000	470
Colton	60.2	42,900	182	52.0	98,500	484
Riverside County	68.4	67,300	229	67.4	139,100	502

Notes: 1980 figures refer to occupied, year-round units; 1990 figures refer to occupied, total housing units.

(a) Owner-occupied units, 1980 dollars.

(b) Renter-occupied units, 1980 dollars (by month).

(c) Owner-occupied units, 1990 dollars.

(d) Renter-occupied units, 1990 dollars (by month).

Sources: U.S. Bureau of the Census, 1982b, 1991.

increased markedly in all five ACS communities during the 1980s. Escalating costs are assumed to be the main reason that the proportion of owner-occupied units declined in each community considered except Loma Linda. Housing values were highest in Loma Linda in 1990, while contract rent was highest in Redlands; housing costs in the city of San Bernardino were lowest of the five communities examined, though they still grew substantially. Increases in the costs of housing throughout the ROI during the 1980s have brought housing affordability to the forefront of planning concerns (City of Colton, 1987; City of Redlands, 1988, 1989b; City of San Bernardino, 1989a; San Bernardino County, 1990b; City of Highland, 1991; Highland Redevelopment Agency, 1991).

Housing construction in San Bernardino County began slowly during the early 1980s, but by 1986 the annual production level had more than quadrupled (Table 3.4-9). Much of the increase in construction during the middle of the decade consisted of multi-family housing, in contrast to both the beginning and end of the 1980s (U.S. Bureau of the Census, 1981, 1982c, 1983, 1984, 1985, 1986, 1987b, 1988, 1989, 1990; City of Colton, 1987; City of Redlands, 1988, 1989b). As a consequence of substantial amounts of housing construction during the 1970s and 1980s, more than half of the present year-round housing stock in San Bernardino County was constructed in these two decades (U.S. Bureau of the Census, 1982b).

**Table 3.4-9. Total Housing Units Authorized by Building Permits for Selected Portions of the Norton AFB ROI: 1980-1990**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
San Bernardino County	8,394	6,578	5,439	12,722	19,604	22,811	34,292	21,174	18,933	19,908	13,093
San Bernardino	1,352	750	238	775	1,993	1,492	3,087	1,164	296	1,011	1,050
Redlands	198	132	160	241	709	1,344	1,293	573	313	394	309
Highland	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	391	402	241
Loma Linda	2	6	1	31	505	677	203	127	242	86	980
Colton	129	93	54	162	1,117	1,104	1,274	671	802	254	103

Note: Measure N, an initiative to limit residential growth and density in Redlands, was passed by Redlands voters in November 1987.  
N/A = Not available.

Sources: U.S. Bureau of the Census, 1981, 1982c, 1983, 1984, 1985, 1986, 1987b, 1988, 1989, 1990.

**Table 3.4-10. Projected Site-Related Housing Demands, 1987 to Closure**

	1987	1988	1989	1990	1991	1992	1993	Closure*
San Bernardino County	5,359	4,016	3,749	3,534	3,483	2,743	1,682	0
San Bernardino	1,619	1,157	1,066	990	973	882	507	0
Redlands	1,460	1,082	1,007	945	930	658	371	0
Highland	395	298	279	263	259	185	106	0
Loma Linda	421	312	290	272	268	190	107	0
Colton	213	161	151	142	141	102	61	0
Rest of County	1,252	1,006	956	921	912	726	530	0
Riverside County	990	814	778	754	748	613	471	0
Total	6,349	4,830	4,527	4,288	4,232	3,356	2,153	0

\* Closure represents March 1994 conditions.

### Impacts of Closure

Reductions in housing demand are anticipated for both counties in the ROI and for all five ACS communities following base closure (Table 3.4-10). The nature of these impacts parallels the population impacts discussed earlier. For San Bernardino County, site-related housing demand is anticipated to decline after 1990, decreasing to zero by closure. (Because caretaker activities at the base are assumed to be provided by existing area residents, the additional housing demand associated with these workers would still be zero.) Riverside County housing demand also is anticipated to decrease by about 750 housing units between 1990 and closure. The greatest reductions in site-related housing demand at the sub-county level are projected for the cities of San Bernardino and Redlands. Absolute declines in site-related housing requirements are anticipated to be much less in the remaining three ACS communities, though the relative impacts are greater due to the smaller housing stock contained in each. As was the case with population impacts, the major consequence of this decline in site-related housing demand would be a relatively minor reduction in baseline growth.

#### **3.4.4 Public Services**

The key public services examined in this analysis are municipal and county government, public education, police and fire protection, and health care. In the Norton AFB region, providers of these services are county and city governments, public school districts, police and fire departments, and hospitals and clinics. The following section presents a discussion of the existing and closure conditions for each of these major public services in the ROI and ACS focusing on those service providers that are closest geographically to Norton AFB and/or maintain the closest relations to the base.

The levels of general public service are usually determined by the ratio of employees (e.g., municipal employees, sworn officers, professional fire fighters) to serviced population and by student/teacher ratios at the primary and secondary public school levels. In addition, staffing per area of service also is used where jurisdictional population is unknown or where impacts of boundary changes need to be assessed.

##### **3.4.4.1 Governmental Structure**

#### Recent Trends

##### **San Bernardino County**

San Bernardino County was created in 1853; its County Charter was approved by the California legislature in 1913, granting the Board of Supervisors fundamental powers as the county's legislative and executive



body. The board consists of five supervisors from five districts who are elected to 4-year terms; one supervisor serves as board chairman. Each of the supervisorial districts is apportioned based on population (San Bernardino County, 1991).

San Bernardino County administers more than 100 major services, including road work, public protection, health care, and social benefits. The county employs approximately 11,000 full- and part-time personnel throughout the county, leading to an overall level of service of 7.8 personnel per 1,000 people. Of the county's various departments, the Sheriff, Public Social Services, and Public Works have the most employees (Garrison, 1991).

#### **City of San Bernardino**

The city of San Bernardino, incorporated in 1854, operates under a mayor/council form of government. The City Council consists of seven elected council members and one executive assistant. The principal responsibilities of the City Council include legislating ordinances and setting policy. The city of San Bernardino provides municipal services through 11 municipal departments, including administration, planning and building services, personnel, recreation and community service, public services, public works, police, fire, finance, library, and community and economic development within its 57-square-mile area. The city currently employs approximately 1,300 people and maintains a level of municipal service of 7.9 personnel per 1,000 people and an area level of service of 28 acres per municipal employee (City of San Bernardino, undated; San Bernardino Area Chamber of Commerce, 1990).

#### **City of Redlands**

The city of Redlands was incorporated in 1888, and comprises approximately 37 square miles. The city operates under a council/manager system of government; the government leader is the mayor, who is an honorary member of the council. The city has 12 municipal departments: city clerk, city council, city manager, city treasurer, community development, community services, finance, fire, library, personnel, police, and public works. The city currently has 451 full-time municipal positions that provide the city with a level of service of 7.5 personnel per 1,000 people; the city's Public Works Department is the largest department with respect to employment (City of Redlands, 1991; Shaw, 1991).

#### **City of Highland**

The city of Highland was incorporated in 1987, and operates under a mayor/council system of government. The town's governmental structure is divided into 12 municipal departments. The city contracts outside services providers for police protection, building and safety, engineering, and street

maintenance. The city directly employs 17 personnel and contracts out an additional 56 employees, leading to a municipal level of service of 0.5 personnel per 1,000 people (Hughes, 1991).

Including the contract employees, service levels would be 2.1 personnel per 1,000 people. These rates represent less than one-half the rates found in the surrounding, more established communities in the area. As the city matures, increased growth in the tax base will likely result in the city being able to support service levels comparable to those found in surrounding communities.

#### **City of Loma Linda**

The municipal government of the city of Loma Linda operates five major departments under a council/city manager form of government. The city employs 89 full-time personnel and maintains a municipal level of service of 5.1 employees per 1,000 people. The largest municipal department with respect to employment is the Department of Public Services, which includes divisions of utilities and field services.

#### **City of Colton**

The city of Colton operates under a council/city manager form of government. The municipal government operates eight departments. The city employs 420 full-time personnel and maintains a municipal level of service of 10.3 employees per 1,000 people. The largest municipal departments with respect to employment are the police department, public works, and fire department (Aguilera, 1991).

#### **Inland Valley Development Agency**

The IVDA is composed of four local governments: the city of San Bernardino, the city of Loma Linda, the city of Colton, and San Bernardino County. It is a Joint Powers Agency created for the purpose of planning and implementing the reuse of Norton AFB as discussed in the Proposed Action. Current activities are limited to planning for the reuse of Norton AFB. These four jurisdictions created the IVDA with the view that it would become an implementation entity which may take on a wide variety of administrative, developmental, and operations responsibilities. In the event reuse of Norton AFB does proceed, the IVDA could serve as a commercial airport operator (as would be the case if it were reformed as an airport authority), redevelopment agency, a landowner, and a landlord. The IVDA project area encompasses approximately 14,250 noncontiguous acres within a 3-mile radius of Norton AFB.

### Impacts of Closure

Changes to local government employment arising from closure of Norton AFB are presented in Table 3.4-11. Potential effects attributable to changes in demand for local government services would follow the pattern of project-related population changes and would primarily affect employment by San Bernardino County and the cities of San Bernardino and Redlands. These changes reflect the reduction in the number of personnel in each jurisdiction due to base closure while still maintaining current service levels, excluding effects associated with other non-base-related growth. Under the closure scenario, the personnel associated with caretaker operations are assumed to be local hires and, thus, would not represent additional demands for local services.

**Table 3.4-11. Site-Related Local Government Employees, 1987 to Closure**

	1987	1988	1989	1990	1991	1992	1993	Closure*
San Bernardino County	128	97	91	86	85	62	38	0
San Bernardino	43	33	31	29	28	20	12	0
Redlands	32	24	22	21	20	14	8	0
Highland	1	0	0	0	0	0	0	0
Loma Linda	6	5	4	4	4	3	2	0
Colton	6	5	5	4	4	3	2	0
Total	216	164	153	144	141	102	62	0

\*Closure represents March 1994 conditions.

Projected, temporary decreasing population in San Bernardino County and the cities of San Bernardino and Redlands arising from base closure would imply that decreased municipal staffs could maintain the current levels of service. These potential reductions in municipal and county government personnel are unlikely since population in the ROI is growing at an average annual rate that either matches or exceeds the population that would be lost by closing the base. Therefore, natural population growth and non-Norton AFB-related in-migration to the region would maintain or expand existing levels of demand for the area's public services and facilities.

#### **3.4.4.2 Public Education**

##### Recent Trends

Thirty-three school districts provide primary and secondary public education in San Bernardino County. Between 1980 and 1989, total enrollments at all public school districts in the county have increased rapidly at an annual rate of 5.1 percent, or approximately 57 percent for that entire period (Table 3.4-12) (California Department of Education, 1987, 1988, and 1989;

Table 3.4-12. Historic Fall Enrollments in Public School Districts in Norton AFB Area: 1980-1990

School District	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Total % Change	Average Annual % Change
San Bernardino City Unified School District	28,302	25,865	27,992	28,859	29,742	31,687	33,454	35,033	36,941	39,033	40,726	43.9	3.7
Redlands Unified School District	10,673	10,817	10,093	10,954	11,228	11,600	12,351	13,369	14,419	15,247	15,971	49.6	4.1
School Districts in Rest of County	135,566	140,196	143,712	146,442	152,826	162,609	173,894	188,916	203,570	219,743	N/A	62.1*	5.5
San Bernardino County Total	174,541	176,678	181,797	186,255	193,796	205,896	219,699	237,318	254,930	274,023	N/A	57.0*	5.1

N/A = Not available.

\* Total percent change for 1980-1989.

Sources: California Department of Education, 1987, 1988, 1989; San Bernardino County Superintendent of Schools, 1990.

Table 3.4-13. Public School District Enrollments and Student-Teacher Ratios

School District	Fall 1987			Fall 1988			Fall 1989		
	Enrolled	Teachers	Students/ Teacher	Enrolled	Teachers	Students/ Teacher	Enrolled	Teachers	Students/ Teacher
San Bernardino City Unified School District	35,033	1,451	24.1	36,941	1,487	24.8	39,033	1,590	24.5
Redlands Unified School District	13,369	553	24.2	14,419	560	25.7	15,247	607	25.1
School Districts in Rest of County	188,916	7,872	24.0	203,570	8,418	24.2	219,743	9,184	23.9
San Bernardino County Total	237,318	9,876	24.0	254,930	10,465	24.4	274,023	11,381	24.1

Sources: California Department of Education, 1987, 1988, and 1989.

Palermo, 1991; San Bernardino County Superintendent of Schools, 1990; Spencer, 1991). In 1989, the ratio of students to teachers averaged over all school districts in the county was 24.1 (Table 3.4-13), compared to a state average of 23 students per teacher (Galbreath, 1991) and a national average of 17.4 students per teacher (U.S. Department of Education, 1990).

Two school districts, San Bernardino City Unified and Redlands Unified, provide public education facilities and services to the large area surrounding Norton AFB (see Figure 3.1-1). These school districts have enrollments that are most affected by military and civilian personnel force strength at Norton AFB.

#### **San Bernardino City Unified School District**

San Bernardino City USD operates 51 schools in the city of San Bernardino and surrounding vicinity, including 37 elementaries, 8 junior highs, 4 high schools, and 2 continuation high schools. With more than 40,700 students enrolled in fall 1990, it is the largest school district in San Bernardino County. This school district provides public education to military family housing residents at Norton AFB; however, the district does not operate any schools on the base property. Enrollments, teaching staff strength, and service ratios are presented in Table 3.4-13.

Between 1980 and 1990, total district enrollment increased quickly, 43.9 percent for the period, or at an annual rate of 3.7 percent (see Table 3.4-12). This growth is attributed largely to non-base-related population growth in the community. With a staff strength of 1,590 full-time equivalent teachers, the student-teacher ratio (a level of service indicator) was 24.5 for the 1989-1990 school year (California Department of Education, 1987, 1988, and 1989; San Bernardino Superintendent of Schools, 1990).

Schools within the district are currently operating at or beyond design capacity. The district's enrollment capacity (including the 19 elementary schools in year-round use) has been estimated between 39,200 and 41,400 students; enrollment for fall 1991 was estimated at 42,790 students. To accommodate excess students, the district uses portable, or mobile, classrooms widely. In addition to the use of portables at existing schools, the district plans to open new elementary schools, if funding is secured, July 1994 (Spencer, 1991). One middle school (of the eight in the district) is planned for year-round use beginning in school year 1992-1993. Although no specific plans have been developed, the district is expected to increase the number of year-round schools in the future.

The San Bernardino City USD serves more dependents of Norton AFB personnel than any other; in Fall 1990, the district's enrollment consisted of an estimated 1,300 dependents of personnel (military and civilian) employed at Norton AFB. Because district enrollment is so large, the total percent of district enrollment that is Norton AFB-related is low (3.2 percent in 1990; Table 3.4-14); in fact, it is less than the average annual growth for the district. The percentage of enrollment comprised of dependents of military or federally employed civilians at Norton AFB has declined from 4.3 percent (approximately 1,575 students) of total district enrollment in 1988 and is anticipated to continue declining as non-Norton AFB-related population in the community increases. These levels would not result in the district being classified as a Super A or Super B district. A district with more than a fifth of enrollment comprising children of military personnel living on base is considered Super A. The same proportion of enrollments attributed to children of military personnel living off base qualifies a district as Super B.

**Table 3.4-14. Enrollments Related to Norton AFB: San Bernardino City Unified School District**

Enrollment Breakdown	Fall 1988	Fall 1989	Fall 1990
Total enrollment	36,941	39,033	40,726
Military dependents	1,010	929	822
Civilian dependents	565	527	481
Total AFB-related dependents	1,575	1,456	1,303
AFB-related percentage of total enrollment	4.3	3.7	3.2

Note: Military-related enrollment figures are estimates.

Sources: California Department of Education, 1987, 1988, and 1989, San Bernardino Superintendent of Schools Office, 1990; Spencer, 1991.

#### **Redlands Unified School District**

The Redlands USD provides primary and secondary public education services for the communities of Redlands, Montone, Forest Falls, Loma Linda, and a portion of Highland through 18 schools: 13 elementary schools, 3 junior high schools, 1 high school, and 1 continuation high school. Total district enrollment in fall 1990 was 15,971 students (Palermo, 1991).

Total enrollment in the district increased rapidly during the 1980s. Enrollment has risen from 10,673 in 1980 to 15,971 in 1990, an annual rate of 4.1 percent, or 49.6 percent for that period (see Table 3.4-12). Of the 15,971 students enrolled in the district in fall 1990, approximately 1,239 of the students, or 7.8 percent, are dependents of personnel (military and civilian) employed at Norton AFB (Table 3.4-15). The number of Norton AFB-related dependents, as well as their percentage of total district enrollment, has fluctuated since fall 1986; however, both values have been

**Table 3.4-15. Enrollments Related to Norton AFB: Redlands Unified School District**

Enrollment Breakdown	Fall 1987	Fall 1988	Fall 1989	Fall 1990
Total enrollment	13,369	14,419	15,247	15,971
Military dependents	622	599	643	875
Civilian dependents	393	387	383	364
Total AFB-related dependents	1,015	986	1,026	1,239
AFB-related percentage of total enrollment	7.6	6.8	6.7	7.8

Note: Military-related enrollment figures are estimates.

Sources: California Department of Education, 1987, 1988; Palermo, 1991; San Bernardino Superintendent of Schools Office, 1990.

increasing over the last few years. The student/teacher ratio, a level of service indicator, was 25.1 for the 1989-1990 school year (San Bernardino Superintendent of Schools, 1990).

As with the San Bernardino City USD, schools in the Redlands USD are currently operating at or beyond classroom capacity (Palermo, 1991) while attempting to provide educational services to increasing numbers of students. The district has attempted to plan for and keep pace with rapid enrollment growth in the past and will continue to do so. Presently, students in four elementary schools attend school year-round. Additionally, in order to maintain pace with this enrollment growth, the district has plans for development of one elementary and one high school (Palermo, 1991).

#### Impacts of Closure

Potential impacts to public school enrollments and teaching staff strength arising from base closure are presented in Tables 3.4-16 and 3.4-17. While nearly all the school districts in the region surrounding Norton AFB would experience some site-related enrollment decreases due to base closure, the greatest decreases would occur in the San Bernardino City USD and Redlands USD.

**Table 3.4-16. Site-Related Enrollments, 1987 to Closure**

	1987	1988	1989	1990	1991	1992	1993	Closure*
San Bernardino City USD	1,388	1,575	1,456	1,303	912	651	374	0
Redlands USD	1,015	986	1,026	1,239	729	516	290	0
Rest of San Bernardino County	838	670	635	611	605	478	343	0
Riverside County	593	488	466	452	449	368	282	0
Total	3,834	3,719	3,583	3,805	2,695	2,012	1,290	0

\*Closure represents March 1994 conditions.

Sources: Palermo, 1991; Spencer, 1991.

**Table 3.4-17. Site-Related School District Staff Employment, 1987 to Closure**

	1987	1988	1989	1990	1991	1992	1993	Closure*
San Bernardino City USD	57	64	59	53	37	27	15	0
Redlands USD	40	39	41	49	29	21	12	0
Rest of San Bernardino County	34	28	27	25	25	19	14	0
Riverside County	25	20	19	19	19	15	12	0
Total	155	151	146	146	110	82	53	0

\*Closure represents March 1994 conditions.

An estimated 7.8 percent of the total enrollment in the Redlands USD and 3.2 percent in the San Bernardino City USD enrolled in fall 1990 were dependents of workers associated directly and indirectly with operations at Norton AFB. By spring 1994, enrollments related to base operations would decline to zero. Caretaker personnel are assumed to be local hires and, thus, their school-age dependents would not represent additional pupils in the local school districts.

Corresponding reductions in base-related demand for teachers and facilities use would temporarily accompany these projected enrollment decreases. These potential reductions in public school enrollments and teachers are likely to be lessened by natural population growth and non-Norton AFB-related in-migration to the region. This incoming population would counter the decreased demand arising from base closure; however, this would be a function of where in-migrants ultimately settle.

#### **3.4.4.3 Police Protection**

##### **Recent Trends**

Police protection in the Norton AFB region is provided by forces from the base; the cities of San Bernardino, Redlands, Highland, Loma Linda, and Colton; the San Bernardino County Sheriff's Department; and the California Highway Patrol. The Highland and Loma Linda Police departments contract their law enforcement services from the San Bernardino County Sheriff's Department. Under the contract, the county provides vehicles, officers, and staff.

Several departments maintain small holding facilities for detainees; however, the principal correctional facility in the region is the San Bernardino County Jail, operated by the San Bernardino County Sheriff's Department and located in San Bernardino, which serves all police departments surrounding Norton AFB.



### **63rd Security Police Squadron**

Law enforcement and police protection within the boundaries of Norton AFB and at base housing are provided by the 63rd Security Police Squadron. The squadron maintains a staffing strength of 138 total personnel, 112 of which are sworn officers, and operates from one station on the base with 13 vehicles, including 6 sedans and 11 trucks. The squadron runs one 3-bed holding facility.

### **City of San Bernardino Police Department**

The San Bernardino Police Department provides law enforcement and police protection services within the 57-square-mile incorporated limits of the city of San Bernardino. The department operates out of a single police station with a strength of 268 sworn officers and 156 non-sworn personnel, with 136 acres per sworn officer. The city's level of service for police protection is 1.6 officers per 1,000 people. The department maintains 129 vehicles, including 63 marked police cruisers, 47 unmarked cruisers, 12 marked motorcycles, and 7 special vehicles. For correction services, the department relies on the County Jail operated by the San Bernardino County Sheriff's Department (Maier, 1991).

The San Bernardino Police Department maintains mutual aid agreements with the county sheriff's offices of both San Bernardino and Riverside counties as well as surrounding municipal police departments in both counties and the Norton AFB Security Police Squadron (Maier, 1991).

### **City of Redlands Police Department**

The Redlands Police Department provides law enforcement services within the city limits of Redlands, a 37-square-mile jurisdiction. The department is staffed with 69 sworn officers and 24 full-time staff personnel, leading to an operating level of service of 1.1 officers per 1,000 people. The department operates from one police station with a total of 62 vehicles, including 26 marked patrol cars, 4 motorcycles, 3 vans, 13 unmarked cars, and several special vehicles. The department has one holding facility with one female cell, one juvenile cell, and two male cells; the department also relies on the San Bernardino County Jail in San Bernardino. Redlands Police Department maintains joint mutual aid agreements with all law enforcement agencies in the county (Nelson, 1991).

### **City of Highland Police Department**

Police protection in the city of Highland is contracted to the San Bernardino County Sheriff's Department. This department provides law enforcement and police protection services within incorporated limits of the city and has a 13-square-mile service area. The department operates out of a single

police station with a strength of 16 sworn officers. The city's level of service for police protection is 0.5 officers per 1,000 people. The department maintains six marked patrol vehicles (Highland Redevelopment Agency, 1991).

#### **Loma Linda Police Department**

Law enforcement within the city limits of Loma Linda is provided by the Loma Linda Police Department, a division of the city's Department of Public Safety. This department is contracted to the San Bernardino County Sheriff's Department and is funded by the city of Loma Linda. The department operates from one police station and has a total staff of 16 of which 13 are sworn officers, leading to an operating level of service of 0.7 officers per 1,000 people. The Loma Linda Police Department maintains seven police cruisers and one unmarked car (Hill, 1991).

#### **City of Colton Police Department**

Law enforcement within the 17-square mile city limits of Colton is provided by the Colton Police Department. The department has a staff strength of 81 sworn officers and 27 support staff members; the department provides police protection at a level of service of 1.5 officers per 1,000 people. The department maintains 23 marked and 26 unmarked vehicles from its single station. For correctional facilities, the department relies on the County Jail operated by San Bernardino County Sheriff's Department (Stratton, 1991).

#### **Impacts of Closure**

Projected effects on police protection in the ROI resulting from base closure are presented in Table 3.4-18. Potential impacts resulting from changes in demand for police protection services reflect the pattern of project-related population changes in the region. Declining requirements for police protection due to base closure likely would be quickly replaced by demand arising from natural population increases and continued non-base-related in-migration to the area.

With the closure of the base, the 63rd Security Police Squadron would no longer provide police protection for the base area. The City of San Bernardino Police Department would support the DMT in assuming responsibility for law enforcement and police protection of the remaining base area since it is located within San Bernardino city limits. Based on a current 136 acres of responsibility per sworn officer level of service for the San Bernardino Police Department, as many as 15 additional officers would be needed to provide law enforcement for the 2,097-acre base area. Police protection at the BMO and military housing area remaining at the site, which would become an annex of March AFB, would be provided by a contingent

**Table 3.4-18. Site-Related Police Officer Employment, 1987 to Closure**

	1987	1988	1989	1990	1991	1992	1993	Closure*
San Bernardino Police Dept.	9	7	6	6	6	4	2	0
Redlands Police Dept.	5	3	3	3	3	2	1	0
Highland Police Dept.	1	0	0	0	0	0	0	0
Loma Linda Police Dept.	1	1	1	1	1	0	0	0
Colton Police Dept.	1	1	1	1	1	0	0	0
<b>Total</b>	<b>17</b>	<b>12</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>6</b>	<b>3</b>	<b>0</b>

\* Closure represents March 1994 conditions.

from March AFB with a mutual aid/joint responsibility agreement with the City of San Bernardino Police Department.

#### **3.4.4.4 Fire Protection**

##### **Recent Trends**

Fire protection in the Norton AFB region is provided chiefly by the base and municipal fire departments. The staffs of each of these organizations are comprised of mostly professional fire fighters; however, staffing strengths are augmented with volunteers. These fire fighters are trained not only to fight structural fires and address hazardous waste and civilian emergencies but also to battle brush fires, which can flare in the semi-arid environment. Each fire department maintains mutual aid agreements and cooperates with others of the region during emergencies.

##### **Norton AFB Fire Department**

The Norton AFB Fire Department (63rd Civil Engineering Squadron (63rd CES/DEF)) provides fire protection services for the base area. This fire protection force has a staffing strength of 67 fire fighters (46 military and 21 civilian) and 26 civilian administrative personnel. The squadron operates from 2 fire stations with 18 pieces of major equipment, including 3 engines, 5 crash trucks, 4 squad/rescue vehicles, 2 ramp vehicles, 2 command vehicles, 1 hazardous materials vehicle, and 1 water tender. The base fire department supports six other area fire fighting departments through mutual aid agreements. With the exception of major aircraft accident/emergency equipment, the Norton AFB Fire Department maintains no specialized fire fighting equipment that surrounding community fire departments do not have.

### **City of San Bernardino Fire Department**

The City of San Bernardino Fire Department provides fire protection services for the 57 square miles comprising the city of San Bernardino. With a total of 198 professional fire fighters, the department maintains a level of service of 1.2 fire fighters per 1,000 people and 184 acres per fire fighter (San Bernardino Area Chamber of Commerce, 1990). The department currently operates eleven stations with the following equipment: eleven 1,500-gallon-per-minute pumpers, four reserve pumpers, two rescue vehicles, one hazardous materials vehicle, one compressed air truck, nine water tender/brush fire vehicles, and one mobile command center vehicle. With the exception of the California Department of Forestry and Fire Protection (CDFFP), which also provides fire protection services for the city of Highland, the City of San Bernardino Fire Department maintains joint response agreements with all the municipal fire departments surrounding the city of San Bernardino (Cobb, 1991). The city of San Bernardino has a fire insurance rating of 2 as determined by the Insurance Service Organization (based on a scale of 1 to 10, with 1 being the best rating).

### **Redlands Fire Department**

The Redlands Fire Department provides fire protection, emergency medical services, and hazardous materials services for the city of Redlands, a service area of 37 square miles. The department maintains a total staff of 60 personnel. Of these, 53 are professional fire fighters including 17 paramedics, 10 hazardous materials specialists, and 6 heavy rescue specialists. The department provides a fire fighting level of service of 0.9 fire fighters per 1,000 people. Through three fire stations, the department operates three pumpers, two 1,000-gallon water tenders, one 100-foot ladder truck, one paramedic squad, and one hazardous materials unit. The Redlands Fire Department maintains mutual aid/joint response agreements with the fire protection squadron at Norton AFB and all municipal fire departments serving the cities surrounding Redlands. This department has no history of emergency assistance from the Norton AFB Fire Department; the departments do cooperate with disaster preparedness training (Forsythe, 1991). The city of Redlands has a fire insurance rating of 2 as determined by the Insurance Service Organization.

### **City of Highland**

Fire protection in the city of Highland is provided by the CDFFP through a contract with the county of San Bernardino. Highland is located within CDFFP's Community Service Area 38 and is served primarily by its Station 6. From this station, CDFFP maintains 2 Type One fire engines and 1 paramedic squad, and a staff strength of 38 professional fire fighters, fire apparatus engineers, and paramedics. Based on staffing strength at this station, the city of Highland would maintain a fire protection level of service

of 1.1 fire fighting professionals per 1,000 people. However, this level of service may be misleading in that Station 6 is also responsible for additional areas outside the city of Highland and the city of Highland also relies on other CDFFP stations in San Bernardino, Mentone, and Loma Linda for response support. The city of Highland has a fire insurance rating of 5-6 as determined by the Insurance Service Organization. The district maintains mutual aid agreements with other departments in the region, including Norton AFB (Highland Redevelopment Agency, 1991).

#### **Loma Linda Fire Department**

Fire protection services within the 7.5 square miles of the city of Loma Linda are provided by the Loma Linda Fire Department, a division of the city's Department of Public Safety. The department maintains a staff of 16 professional fire fighters and provides fire protection services at a level of service of 0.9 fire fighters per 1,000 people; the department also retains the services of 40 paid-call fire fighters. The department runs one fire station in the city and maintains three Type I pumper engines, one water tender, one aerial ladder platform, one medium squad car, and additional staff cars. Mutual agreements are held with departments from surrounding communities; automatic aid agreements are held with fire departments from Redlands, San Bernardino, and Colton. Historic emergency aid from the fire squadron at Norton AFB has been assistance in fighting brush fires (Hill, 1991). The city of Loma Linda has a fire insurance rating of 4 as determined by the Insurance Service Organization.

#### **Colton Fire Department**

The Colton Fire Department is responsible for fire prevention, protection, and suppression services within the 17 square miles of the city of Colton. With 56 professional fire fighters and 5 support staff, the district provides fire protection services at a level of service of 1.4 fire fighters per 1,000 people. The district runs four fire stations in the city and maintains six pumper engines, three water tenders, one ladder truck, one paramedic squad, two maintenance vehicles, one utility vehicle, and six staff cars. Joint response agreements are held with departments from the cities of San Bernardino, Rialto, Loma Linda, and CDFFP. The Colton Fire Department has no history of emergency help from the fire squadron at Norton AFB (Beach, 1991). The city of Colton has a fire insurance rating of 3 as determined by the Insurance Service Organization.

#### **California Department of Forestry and Fire Protection**

Fire protection in the city of Highland is provided by the CDFFP through a contract with the county of San Bernardino. Highland is located within CDFFP's Community Service Area 38 and is served primarily by CDFFP Station 6. From this station, CDFFP maintains 2 Type One fire engines and

1 paramedic squad, and a staff strength of 38 professional fire fighters, fire apparatus engineers, and paramedics. Based on staffing strength at this station, the city of Highland would maintain a fire protection level of service of 1.1 fire fighting professionals per 1,000 people. However, this level of service may be misleading in that Station 6 is also responsible for additional areas outside the city of Highland and the city of Highland also relies on other CDFFP stations in San Bernardino, Mentone, and Loma Linda for response support. The district maintains mutual aid agreements with other departments in the region, including Norton AFB (Highland Redevelopment Agency, 1991).

#### Impacts of Closure

Potential impacts on fire protection services in the ROI are presented in Table 3.4-19. Local fire districts and communities no longer would be able to rely on the Norton AFB fire fighting squadron to assist in fire protection, fire suppression, or hazardous materials emergencies since Norton AFB fire protection services would no longer exist. Responsibility for fire protection over the current base area likely would be assumed by the City of San Bernardino Fire Department (preliminary discussions between representatives of the base and the fire department are currently underway). Based on a current fire fighter level of service for the San Bernardino Fire Department, an additional 11 fire fighters would be needed by that department to provide fire protection for the 2,097-acre base area.

**Table 3.4-19. Site-Related Fire Fighter Employment, 1987 to Closure**

	1987	1988	1989	1990	1991	1992	1993	Closure*
San Bernardino Fire Dept.	7	5	5	4	4	3	2	0
Redlands Fire Dept.	4	3	3	2	2	2	1	0
CDFFP (Highland)	1	1	1	1	1	1	0	0
Loma Linda Fire Dept.	1	1	1	1	1	0	0	0
Colton Fire Department	1	1	1	1	1	0	0	0
<b>Total</b>	<b>14</b>	<b>11</b>	<b>11</b>	<b>9</b>	<b>9</b>	<b>6</b>	<b>3</b>	<b>0</b>

\* Closure represents March 1994 conditions.

#### **3.4.4.5 Health Care**

##### Recent Trends

Thirty-eight acute and general care hospitals are licensed to provide health care services within San Bernardino and Riverside counties, including the 95-bed hospital at March AFB. Those facilities provide a total of more than 6,600 inpatient beds within the ROI (Josie, 1991). Currently 2,605

medical doctors and surgeons (MDs), 10,540 registered nurses (RNs), and 3,566 licensed vocational nurses (LVNs) are registered to practice in San Bernardino County; there are 1,666 MDs, 7,854 RNs, and 2,775 LVNs registered to practice in Riverside County (Rene, 1991). The ROI combined total of MDs is 4,271, with 18,394 RNs and 6,341 LVNs. The hospital facilities and staff at the California Correctional Institutions for Men and Women in San Bernardino are not included as health care providers in the ROI.

#### **Military Health Care Services**

The Norton AFB Clinic provides health care services to active military personnel and their dependents, retired military personnel and their dependents, and to dependents of deceased military personnel. The clinic served 106,427 medical and 138,996 dental outpatients in FY 1989, for an average of slightly more than 20,000 visits per month (U.S. Air Force, 1990b). The clinic's staff conducted more than 380,000 laboratory and X-ray procedures and filled 246,098 prescriptions during FY 1989.

Outpatient services at the Norton AFB Clinic are offered from 7:15 a.m. until 5:00 p.m. Monday through Friday in acute care, primary care, gynecology and obstetrics, physical therapy, and general dentistry. There is also a mental health clinic to provide counseling. A full service pharmacy and medical laboratory are also located at the base.

March AFB is located in Riverside County approximately 15 miles south of Norton AFB. March AFB operates a hospital with 95 beds and both medical and dental outpatient clinics (Crookshank, 1991). The hospital facility at March AFB has additional capacity to house up to 105 inpatient beds. Other DOD installations where medical care is available to active and retired military personnel include Ft. Irwin, the Long Beach Naval Facility, Camp Pendleton Marine Base, Twenty-Nine Palms Marine Corps Training Center, and the Barstow Marine Facility; all of these facilities are within a 2-1/2 hour commute distance. The medical facilities and the variety and extent of medical and dental services available at different DOD installations can vary considerably.

In addition to military health services offered through the base hospital, military personnel and dependents have access to the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), which is a copayment medical plan, with a \$50 deductible, that provides payment for specific medical services to eligible dependents of active, retired, or deceased military personnel. As with many insurance plans, CHAMPUS pays approximately three-quarters of the set rate for a given medical service. Active military personnel also are covered by the program for medical services not available at their base, or for emergencies. CHAMPUS is honored by hospitals, clinics, and doctors nationwide, including all the

health care facilities mentioned in this report. Because there are limitations and constraints to the coverage offered by CHAMPUS, retired military personnel are encouraged to supplement this health care plan with secondary coverage.

The Jerry L. Pettis VA Hospital, located in San Bernardino County, is currently staffed for 440 general medical/surgical beds and 128 nursing home beds (Feldon, 1991). VA hospitals generally provide medical services only to veterans with active-duty-related injuries or illnesses and to former prisoners-of-war. Dependents of veterans are not eligible for VA hospital care.

#### **Regional Health Care Services**

Of the 38 hospitals located within the ROI, 20 facilities are licensed to provide acute and general inpatient health care in San Bernardino County, for a total of 3,500 beds. These individual facilities range in size from 30 to 627 beds. Bear Valley Community Hospital is the smallest of the hospitals with 30 beds and a 48-percent utilization rate. The county's largest single facility offering inpatient care to the general community is San Bernardino Community Hospital, with 325 beds, operating at a 56-percent utilization rate. Loma Linda University Medical Center Hospital is currently licensed for 747 beds at its 2 San Bernardino County facilities, and operates at an average of 82 percent of its capacity. With most of the area hospitals functioning at 50 to 85 percent of their capacity, it is likely that medical equipment and staffing within the county will be able to serve the health care needs of the community after the closure of the Norton AFB Clinic.

Loma Linda University Medical Center is a pioneer in cardiac procedures and transplant technology. Along with its clinics, Loma Linda University Medical Center and Faculty Medical Group offer alcohol and drug recovery, cardiology, eye care, family medicine, general and internal medicine, gynecology and obstetrics, optical services, orthopedics, neurosurgery, pediatrics, psychiatry, rehabilitation services, urology, and a pain control and personal health support center.

In Riverside County 18 health care providers are licensed to render inpatient services providing about 3,100 acute and chronic-care beds. The smallest is Christian Hospital Medical Center in Perris, with 38 inpatient beds and a 62-percent utilization rate. Riverside General Hospital and University Medical Center, one of the largest health care providers in the county, is an acute care and scientific research facility with 435 beds, operating at 75-percent capacity.

The Kaiser Foundation operates within San Bernardino and Riverside counties with a total of 644 inpatient beds and a utilization rate of 59 percent. The Kaiser Foundation also plans to open an additional clinic in



Redlands. They offer a variety of medical services in acute and chronic care, rehabilitation services, special services in substance abuse (chemical and drug dependency and eating disorders), and a mental health crisis intervention program. Full service pharmacies, laboratories, and outpatient surgery are offered at both Kaiser Foundation hospitals. Kaiser provides medical treatment only to members of one of its Kaiser Health Care Plans. It is likely that some military spouses and retired personnel subscribe to one of the many Kaiser Health Plans.

#### Impacts of Closure

At base closure, Norton AFB Clinic would be closed. The 20 acute care hospitals located within San Bernardino and Riverside counties and various resident medical personnel in the ROI likely would be able to provide adequate medical, dental, and emergency services as required by the community when the Norton AFB Clinic closes; the clinic will be downsized beginning FY 1993. Consequently, beginning October 1992, clinic support at Norton is available only to active duty personnel and their dependents. Retirees and their dependents and the dependents of deceased military personnel must now seek medical care at March AFB. Clinic downsizing and then closure might potentially impact retirees and their dependents by requiring increased driving time to March AFB or any of the other military facilities in San Bernardino, Riverside, Los Angeles, and Orange county areas in order to receive the free medical care to which they are entitled.

#### **3.4.5 Public Finance**

The financial characteristics of the potentially affected local jurisdictions surrounding Norton AFB are presented below. Recent trends are discussed first and are followed by a discussion of the impacts associated with base closure.

##### **3.4.5.1 County of San Bernardino**

#### Recent Trends

Services provided by San Bernardino County are funded principally through the county's general and special revenue funds. In FY 1988, revenues and expenditures of these funds were \$786.9 million and \$757 million, respectively (Table 3.4-20). Fund balances were \$70.6 million, representing approximately 9 percent of operating expenditures in this year. Since FY 1988, revenues have increased at a faster pace than expenditures and fund balances have subsequently risen to \$109.1 million by FY 1990, or about 10 percent of expenditures in that year. Approximately one-half of this amount is reserved or otherwise designated for other uses while the remainder is unreserved and undesignated.

**Table 3.4-20. San Bernardino County Revenues, Expenditures, and Fund Balances, General and Special Revenue Funds, FY 1988-1990 (thousands of current dollars)**

	FY 1988	FY 1989	FY 1990
<b>Revenues</b>			
Taxes	193,015	213,977	238,761
Licenses, permits, and franchises	15,946	16,687	14,148
Fines, forfeitures, and penalties	11,456	13,509	15,378
Use of money and property	17,278	22,721	30,224
Intergovernmental	480,086	550,050	639,913
Charges for services	62,457	71,750	100,211
Miscellaneous	6,632	6,518	10,932
Subtotal	786,870	895,212	1,049,567
<b>Expenditures</b>			
General government	56,033	59,454	69,490
Public protection	219,106	238,064	281,657
Public ways and facilities	29,407	26,849	44,624
Health and sanitation	78,865	84,284	99,874
Public assistance	343,824	405,273	469,197
Education	7,316	7,687	8,889
Recreation and cultural services	9,672	10,679	13,064
Debt service	4,119	6,651	7,811
Capital outlay	8,630	8,303	11,745
Subtotal	756,972	847,244	1,006,351
<b>Fund Balance</b>	<b>70,553</b>	<b>95,058</b>	<b>109,073</b>

**Note:** The recent increase in the state sales tax rate from a basic rate of 6.00 percent to 7.25 percent would not affect local revenues, as the additional funds collected will go directly to the state's general fund. San Bernardino County collects an additional 0.5 percent for transportation projects, but these funds are not available to support general local government operations.

**Sources:** San Bernardino County, 1988, 1989, 1990a.

The principal revenue sources of the city are intergovernmental transfers (61 percent of total FY 1990 general and special revenue fund collections) and tax revenue (23 percent of total FY 1990 collections). Property taxes account for about one-half of all tax collections with the remainder accounted for by sales, use, utility, and franchise taxes. Public assistance payments and public protection (law enforcement and fire protection) account for the principal expenditure functions of the county.

Assessed valuation in the county is approximately \$45 billion. General obligation bond indebtedness was \$10.5 million at the end of FY 1990. Reserve bonding capacity is \$552 million.

### Impacts of Closure

The full effect of base closure will be felt by FY 1994. Reduced site-related personal income levels, lower employment, and out-migration of approximately 12,000 residents from 1988 levels are projected to result in reduced general and special revenue fund revenues of approximately \$7.6 million at closure (Table 3.4-21). Lower intergovernmental revenue (\$5.6 million), charges for services (\$900,000), and lost sales and other tax revenue (\$650,000) would be the principal revenue sources affected. The total revenue loss represents less than 1 percent of the county's general and special revenue fund budgets. Increases in local tax and non-tax revenue schedules and/or lower service levels would be required to maintain a balanced fiscal position in the event that no reuse options are implemented at the base.

**Table 3.4-21. Net Fiscal Effects of Closure of Norton AFB on Potentially Affected Local Government Units, FY 1990-1994 (thousands of 1990 dollars)**

Jurisdiction	FY 1990	FY 1991	FY 1992	FY 1993	Closure
County of San Bernardino	-852	-940	-2,725	-4,612	-7,595
City of San Bernardino	-146	-158	-531	-926	-1,456
San Bernardino City Unified School District	-65	-116	-247	-380	-570
City of Redlands	-87	-96	-283	-482	-739
Redlands Unified School District	-14	-19	-46	-74	-113
City of Highland	-20	-22	-67	-114	-178
City of Loma Linda	-33	-36	-104	-177	-270
City of Colton	-17	-18	-69	-122	-196

**Note:** Data reflect the difference in projected revenue losses less expenditure reductions.

These shortfalls may be offset to a certain degree by the revaluations required under Proposition 13 upon the sale of a home. With the closure of the base, higher than normal turnover in the residential real estate market can be expected. Under Proposition 13, upon resale of a property, the assessed valuation of the property increases to the market value. These higher assessed values would result in higher property taxes accruing to the potentially affected jurisdictions. The actual impact of these reassessments, however, is uncertain at this time and depends upon the tenure and home ownership patterns of the affected household. These impacts could be negligible if the out-migrants either did not own their home, were recent homeowners, or decided not to sell at all. It could be substantial if a large

portion of the out-migrants owned their homes prior to implementation of Proposition 13 and subsequently sold these homes upon closure of the base.

### 3.4.5.2 City of San Bernardino

#### Recent Trends

Services provided by the city of San Bernardino are funded principally through the city's general and special revenue funds. In FY 1988, revenues and expenditures of these funds were \$58.5 million and \$58.2 million, respectively (Table 3.4-22). Fund balances were \$1.2 million, representing about 2 percent of operating expenditures in that year. By FY 1989, revenues and expenditures had increased to \$67.7 million and \$64.4 million, respectively, and fund balances stood at approximately \$8.6 million, or about 13 percent of expenditures in that year. Financial reports for FY 1990 are unavailable at this time.

**Table 3.4-22. City of San Bernardino Revenues and Expenditures, General and Special Revenue Funds, FY 1988-1989 (current dollars)**

	1988	1989
<b>Revenues</b>		
Property taxes	7,334,830	9,545,708
Other taxes	30,973,887	34,507,388
Licenses and permits	4,040,332	4,850,183
Fines and forfeits	444,047	442,943
Use of money and property	1,719,555	2,122,490
Intergovernmental	10,313,451	12,252,476
Charges for services	1,402,047	1,933,486
Other	2,266,202	2,020,814
Subtotal	58,494,351	67,675,488
<b>Expenditures</b>		
General government	10,456,391	12,639,423
Public safety	27,655,120	30,683,538
Public works	9,596,871	10,379,851
Recreational and cultural services	6,202,683	6,488,084
Capital outlay	4,203,225	4,150,411
Debt service	108,002	67,109
Subtotal	58,222,292	64,408,416
<b>Fund Balance</b>	<b>1,227,056</b>	<b>8,617,315</b>

Sources: City of San Bernardino, 1989a, 1989b.

Sales taxes (\$20.6 million in FY 1989), intergovernmental revenue (\$12.3 million), and property taxes (\$9.5 million) are the principal revenue sources of the city. Public safety functions (law enforcement and fire protection) account for the largest expenditure functions of the city. FY 1989 police department costs were approximately \$19.3 million, or 30 percent of the city's general and special revenue fund expenditures. Fire department expenditures were \$11.7 million, or 18 percent of the total.

The city has no general obligation bond indebtedness. However, other general long-term debt outstanding, principally redevelopment agency tax allocation bonds (\$62.2 million) and certificates of participation (\$9.3 million), totaled \$103.2 million at the end of FY 1989.

#### Impacts of Closure

The full effect of base closure on city finances will be felt by FY 1994. Reduced site-related personal income, lower employment, and out-migration of approximately 3,800 residents from 1988 levels are projected to result in reduced general and special revenue fund revenues of approximately \$1.5 million (see Table 3.4-21). Sales tax (\$460,000), franchise and utility taxes (\$370,000), and intergovernmental revenue (\$340,000) would be the principal revenue sources affected. The total revenue loss represents about 2 percent of the city's general and special revenue budgets.

These revenue losses could be offset by lower outlays if city agencies respond by budget cutbacks, either through personnel cutbacks, deferred maintenance and capital outlays, and reduced non-personnel-related outlays. However, the level of the population change, coupled with other non-base-related growth and the service demands associated with this growth, would likely preclude these types of responses by city agencies. Alternative sources of revenue, such as increases in tax and non-tax revenue schedules, new taxes, new fees for services, would be required to offset projected shortfalls.

These shortfalls also may be offset to a certain degree by the reassessment of property upon the sale of homes previously owned by the out-migrating households and the subsequent increase in valuations and property tax collections due to these sales and revaluations. The extent, however, of this effect depends upon the tenure and home ownership patterns of the out-migrating households.

#### **3.4.5.3 San Bernardino City Unified School District**

##### Recent Trends

Services provided by the San Bernardino City USD are funded principally through the district's general fund. In FY 1988, revenues and expenditures

of this fund were \$130.5 million and \$123.6 million, respectively (Table 3.4-23). Fund balances were \$25.7 million, representing about 20 percent of operating expenditures in that year. Increasing enrollments have resulted in both revenues and expenditures increasing to about \$175.8 million and \$163.1 million by FY 1990. Fund balances have also increased and at the end of FY 1990 amounted to \$41.4 million, representing about 25 percent of expenditures in that year.

**Table 3.4-23. San Bernardino City Unified School District, General Fund Revenues and Expenditures, FY 1988-1990 (current dollars)**

	1988	1989	1990
<b>Revenues</b>			
Revenue limit sources	89,897,402	98,389,202	111,143,340
State apportionment	76,639,194	84,145,565	94,693,257
Local sources	13,258,208	14,243,637	16,450,083
Other state sources	31,156,629	36,828,134	38,183,443
Other local sources	3,286,293	3,968,644	18,112,540
Federal sources	6,198,761	6,869,262	8,322,607
P.L. 81-874	254,133	337,136	445,417
Other	5,944,628	6,532,126	7,877,190
Subtotal	130,539,085	146,055,242	175,761,930
<b>Expenditures</b>			
Instruction/supplies	109,184,537	117,838,673	135,656,624
Operating expenses	10,171,712	13,621,744	16,339,128
Other	4,213,792	11,595,248	11,094,673
Subtotal	123,570,041	143,055,665	163,090,425
<b>Fund Balance</b>	<b>25,687,519</b>	<b>28,687,096</b>	<b>41,358,601</b>

Sources: Fleming Reiss & Co., 1988, 1989, 1990.

State source revenue is the principal revenue source of the district. In FY 1990, state source revenue (including the state apportionment of the revenue limit component and other state source revenue) accounted for 75 percent of all general fund revenues. The state apportionment included in the revenue limit source category accounts for the majority of the state source revenue. Revenue limit source revenue is comprised of both the state apportionment and local property taxes and represents the base revenue limit in the school district. In FY 1990, revenue limit source revenue was \$111.1 million, representing about \$2,975 per pupil. The amount of the state apportionment varies on an annual basis and depends upon the amount of property taxes collected by the district. As property taxes increase, the state apportionment component of the revenue limit source revenue decreases so that the total revenue limit source revenue essentially remains unchanged. Adjustments are made for cost-of-living increases on an annual basis. The amount of the state apportionment also depends upon availability of state revenues for funding of these guaranteed

levels. State funding is subject to legislative appropriation and may or may not keep pace with local costs.

P.L. 81-874 program revenues in FY 1990 amounted to approximately \$450,000, representing about 1 percent of district general fund revenues in this year. All federal source revenue accounted for 4.7 percent of total revenues in FY 1990. Of the non-P.L. 81-874 federal revenues, about 75 percent of this amount is accounted for by monies authorized under the Education Consolidation and Improvement Act of 1981. These monies are available to provide assistance to meet the needs of educationally deprived children (children of certain migrant parents, Indian children, children of low-income families, handicapped, neglected, and delinquent children).

Principal financial concerns of the district include the level of state aid covering operating expenses, as well as sources of funds for capital improvements.

#### Impacts of Closure

The projected reduction in site-related enrollments of approximately 1,600 students from 1988 levels will principally affect the amount of state educational aid revenues the district receives. Revenue limit sources are the district's primary source of revenue. Revenue limits are calculated on a per-pupil basis and are funded by a combination of local property taxes and state aid. The per-pupil revenue limit in the district (in constant 1990 dollar values) is about \$2,975 per pupil. Reduced revenue limit source revenue is projected to be approximately \$2.6 million by FY 1994. Since property taxes may actually increase somewhat due to reassessment (depending upon the tenure and home ownership patterns of the out-migrating households), this reduction would principally be in the form of reduced state aid payments. Total revenue reductions, including other state, local, and federal program revenues, would amount to \$4.4 million. Federal program revenue reductions include approximately \$450,000 in P.L. 81-874 program revenues. The loss in federal revenue may be offset by increases in other federal programs (such as the Education Consolidation Act and Elementary and Secondary Education Act) depending upon the availability of federal funding and the entitlement criteria set forth in the regulations for these programs.

Assuming class sizes remain constant and not including potential growth associated with non-base-related activities, the projected reduction in enrollments of 900 students would result in a direct need for fewer teachers and a subsequent reduction in direct instruction costs. Direct instruction costs are estimated to decrease by approximately \$3.9 million. Other costs, such as general administrative and other operating costs, are expected to remain at or near preclosure announcement levels. These expenditure reductions would not be sufficient to offset revenue losses and shortfalls of

approximately \$570,000 (due primarily to lost P.L. 81-874 monies) projected at closure (see Table 3.4-21). Further cutbacks or alternate revenue sources would be required to offset these losses. If Section 3 transition entitlements (a P.L. 81-874 program to reduce the severity of a sudden loss in federally connected students) are fully funded, these effects would be less severe and would be apportioned, in reducing amounts, over the 3-year period starting in FY 1995.

Because the district is experiencing growth on the order of 4 percent per year from other non-base-related activities, the cumulative impact of this growth and the impacts from base closure would be to simply slow the overall rate of growth in the district. The district has indicated that rather than lay off instructional personnel in response to the reduced enrollments due to base closure, the district, under a cumulative analysis, would more likely be required to simply hire fewer teachers. Correspondingly, revenue growth from state, local, and federal sources, under a cumulative analysis, would also simply grow at a reduced rate.

#### **3.4.5.4 City of Redlands**

##### **Recent Trends**

Governmental fund revenue and expenditures of the city of Redlands (general fund, special revenue fund, debt service, and capital project funds) were \$24.5 million and \$42.6 million in FY 1988 (Table 3.4-24). Fund balances were \$14.6 million, representing about 34 percent of expenditures in that year. By FY 1990, revenues had increased to \$31.3 million, while expenditures had decreased to \$38.2 million. Most of this activity was accounted for by changes in the city's capital project accounts.

General and special revenue fund revenues and expenditures account for the largest portion of the governmental fund revenues and expenditures. In FY 1990, revenues and expenditures of these funds were \$25.7 million and \$25.9 million, respectively. Fund balances in these accounts were \$2.5 million, representing about 10 percent of expenditures in that year. Property (real estate and personal property) tax revenue is the principal revenue source of the city, accounting for \$10.5 million of total revenue in FY 1990. Property taxes are collected by the county and subsequently distributed to the various taxing entities within the county. Public safety services (principally, law enforcement and fire protection) are the major expenditure functions of the city. In FY 1990, expenditures for these functions amounted to \$12 million, or about 46 percent of all general and special revenue fund expenditures.

Assessed valuation in the city is \$2 billion. General obligation bond indebtedness was \$7.6 million at the end of FY 1990. The city has no



**Table 3.4-24. City of Redlands Revenues, Expenditures, and Fund Balances,  
All Governmental Funds, FY 1988-1990 (current dollars)**

	1988	1989	1990
<b>Revenues</b>			
Taxes	14,351,756	16,151,918	17,239,141
Licenses, permits, and fines	2,505,317	3,061,384	4,637,900
Intergovernmental	3,689,721	4,071,277	4,294,184
Charges for services	1,643,518	2,293,534	2,619,900
Investment income and rents	1,698,026	2,493,581	2,238,916
Miscellaneous	632,674	480,883	232,746
Subtotal	24,521,012	28,552,577	31,262,787
<b>Expenditures</b>			
General government	6,865,826	5,800,236	5,991,782
Public safety	11,087,727	11,343,041	12,031,337
Highways and streets	4,869,155	2,712,755	2,271,512
Culture and recreation	2,111,111	2,339,197	2,460,555
Library	952,653	937,086	999,756
Capital outlay	11,924,374	6,156,157	8,363,009
Debt service	4,829,615	5,400,854	6,116,802
Subtotal	42,640,461	34,689,326	38,234,753
<b>Fund Balance</b>	<b>14,580,957</b>	<b>3,519,195</b>	<b>943,131</b>

Sources: City of Redlands, 1989a, 1990.

statutory debt limit. However, general obligation bond indebtedness is only authorized by a two-thirds vote by the city's voters.

#### Impacts of Closure

The full effect of base closure on city finances will be felt by FY 1994. Reduced site-related personal income levels, lower employment, and out-migration of an estimated 2,900 residents are projected to result in reduced general and special revenue fund revenues of approximately \$740,000 at closure (see Table 3.4-21). This would represent approximately 3 percent of the city's general and special revenue fund budget. Lower intergovernmental revenue (\$200,000), license and permit revenue (\$200,000), and sales tax revenue (\$100,000) would be the principal revenue sources affected.

These revenue losses could be offset by lower outlays if city agencies respond by budget cutbacks, either through personnel cutbacks, deferred maintenance and capital outlays, or reduced non-personnel-related outlays, as examples. However, the level of the population change in the city,

coupled with other non-base-related growth and the service demands associated with this growth, would likely preclude these types of responses by city agencies. Alternative sources of revenue, such as increases in tax and non-tax revenue schedules, new taxes, or new fees for services, as examples, would be required to offset projected shortfalls.

These shortfalls also may be offset to a certain degree by the reassessment of property upon the sale of homes previously owned by the out-migrating households and the subsequent increase in valuations and property tax collections due to these sales and revaluations.

#### **3.4.5.5 Redlands Unified School District**

##### **Recent Trends**

Services provided by the Redlands USD are funded principally through the district's general fund. In FY 1988, revenues and expenditures of this fund were \$45.3 million and \$44.9 million, respectively (Table 3.4-25). Fund balances were \$2.3 million, representing about 5 percent of operating expenditures in that year. State source revenue (including the state apportionment component of the base revenue limit amount and other state source revenue) accounted for about 80 percent of all general fund revenue in that year.

Revenues have increased at a slightly faster pace than expenditures since FY 1988. By FY 1990, revenues and expenditures were \$59.2 million and \$58.4 million, respectively, with the fund balances subsequently increasing to \$4.1 million, or about 7 percent of expenditures in that year. Revenue limit source revenue in FY 1990 was \$49 million. Based on second period average daily attendance of 15,180 pupils, per-pupil revenue limit source revenue is approximately \$3,230 per pupil. State funding is subject to legislative appropriation and may or may not keep pace with local costs.

P.L. 81-874 program revenues were \$45,000 in FY 1990, representing about 0.1 percent of all general fund revenues in this year. These revenues are not considered local source revenue and do not enter into state aid calculations. The local source component of the revenue limit amount is limited to the district's property tax allocation.

##### **Impacts of Closure**

The projected reduction in enrollments of approximately 1,000 students will principally affect the amount of state educational aid revenues the district will receive. Revenue limit sources are the district's primary source of revenue. Revenue limits are calculated on a per-pupil basis and are funded by a combination of local property taxes and state aid. The per-pupil revenue limit in the district (in constant 1990 dollar values) is about \$3,230

**Table 3.4-25. Redlands Unified School District, General Fund Revenues and Expenditures,  
FY 1988-1990 (thousands of current dollars)**

	1988	1989	1990
<b>Revenues</b>			
Revenue limit sources	37,017	43,563	48,993
State apportionment	29,681	35,233	39,278
Local sources	7,336	8,330	9,715
Other state sources	6,369	6,174	7,471
Other local sources	1,060	850	1,237
Federal sources	818	1,358	1,476
P.L. 81-874	N/A	N/A	45
Other	N/A	N/A	1,431
Subtotal	45,264	51,945	59,177
<b>Expenditures</b>			
Salaries/benefits/supplies	39,135	43,832	50,787
Operating expenses	2,646	3,132	3,652
Other	3,138	3,804	3,919
Subtotal	44,919	50,768	58,358
<b>Fund Balance</b>	<b>2,253</b>	<b>3,476</b>	<b>4,126</b>

N/A = Not available.

Source: Jacobs, McDermith & Schaich, 1990.

per pupil. Reduced revenue limit source revenue is projected to be approximately \$2.3 million by FY 1994. Since property taxes may actually increase somewhat due to reassessment (depending upon the tenure and home ownership patterns of the out-migrating households), this reduction would principally be in the form of reduced state aid payments. Total revenue reductions, including other state, local, and federal program revenues, would amount to \$2.8 million. Federal program revenue reductions include approximately \$45,000 in P.L. 81-874 program revenues.

Assuming class sizes remain constant and excluding effects associated with non-base-related growth, reduced enrollments will result in a need for fewer teachers. Direct instruction costs are estimated to decrease by approximately \$2.4 million. Other costs, such as general administrative and other operating costs, are expected to remain at or near preclosure announcement levels. These expenditure reductions would not be sufficient to offset projected revenue losses and shortfalls (primarily due to loss of P.L. 81-874 program revenues) of approximately \$110,000 annually projected at closure (see Table 3.4-21). Further cutbacks or alternate revenue sources would be required to offset these losses. If Section 3 transition entitlements are fully funded, these effects would be less severe and would be apportioned, in reducing amounts, over the 3-year period starting in FY 1994.

Because the district is experiencing growth on the order of 4 percent per year from other non-base-related activities, the cumulative impact of this growth and the impact from base closure would be to simply slow the overall rate of growth in the district. The district has indicated that rather than lay off instructional personnel in response to the reduced enrollments due to base closure, the district, under a cumulative analysis, would more likely be required to simply hire fewer teachers. Correspondingly, revenue growth from state, local, and federal sources under a cumulative analysis would also simply grow at a reduced rate.

#### **3.4.5.6 City of Highland**

##### **Recent Trends**

The city of Highland was incorporated in November 1987, and financial data for FY 1989 represents the first full year of city operations. In FY 1989, revenues and expenditures of the city general and special revenue funds were \$6.7 million and \$3.1 million, respectively (Table 3.4-26). Fund balances were \$4.7 million, representing over 100 percent of expenditures in that year. By FY 1990, revenues grew to \$8.5 million while expenditures amounted to \$5.8 million. Fund balances in FY 1990 amounted to \$7.9 million. Approximately \$300,000 of the fund balance is unreserved and undesignated while the remainder is designated principally for future capital projects.

Property taxes (\$800,000 in FY 1990) and sales taxes (\$1 million) are the principal tax revenues of the city. Charges for services (\$2 million in FY 1990) are the principal non-tax revenue source of the city. General government services and public safety (law enforcement services) are the principal expenditure functions of the city. Law enforcement is provided by contract with the San Bernardino County Sheriff's Department. Assessed valuation in the city is approximately \$700 million. The city has no general obligation bond indebtedness.

On a per-capita basis, the current revenue and expenditure levels in the city represent less than one-half the rates found in the surrounding, more established, communities. As the city matures, increased growth in the tax base will likely result in per-capita revenues and expenditures, increasing to levels comparable to surrounding communities.

##### **Impacts of Closure**

Reduced site-related personal income levels, lower employment, and out-migration of approximately 800 residents will result in reduced general and special revenue fund revenues of approximately \$180,000 at closure (see Table 3.4-21). Lower sales tax revenue, intergovernmental revenue, charges for services, and license and permit revenue would be the principal

**Table 3.4-26. City of Highland Revenues and Expenditures, General and Special Revenue Funds, FY 1989-1990 (current dollars)**

	1989	1990
<b>Revenues</b>		
Taxes	2,022,772	3,060,526
Licenses and permits	808,996	1,214,438
Intergovernmental	1,599,306	1,665,736
Charges for services	2,057,678	2,040,708
Fines and forfeits	12,131	26,667
Interest income	231,765	29,663
Miscellaneous	575	3,951
Subtotal	6,733,223	8,541,689
<b>Expenditures</b>		
General government	1,212,712	2,337,666
Highways and streets	447,750	736,935
Public safety	1,306,530	1,933,310
Capital outlay	83,499	813,837
Subtotal	3,050,491	5,821,748
<b>Fund Balance</b>	<b>4,736,364</b>	<b>7,906,305</b>

Source: City of Highland, 1990.

revenue sources affected. These losses would represent about 2 percent of the city's general and special revenue fund budgets.

Similar to the other potentially affected cities, these losses could be offset by lower outlays if city agencies respond by budget cutbacks through personnel cutbacks, deferred maintenance and capital outlays, and reduced non-personnel-related outlays. However, the level of population change in the city, coupled with other non-base-related growth and the service demands associated with this growth, would likely preclude these types of responses by city agencies. Increases in local tax and non-tax revenue schedules and/or service level reductions would be required to maintain a balanced fiscal position if no reuse options are implemented at the base.

These shortfalls also may be offset to a certain degree by the reassessment of property upon the sale of homes previously owned by the out-migrating households and the subsequent increase in valuations and property tax collections due to these sales and revaluations. The extent, however, of this effect depends upon the tenure and home ownership patterns of the out-migrating households. These effects would be negligible if the out-migrants either did not own their home at all, were recent homeowners, or decided not to sell at all. It could be substantial if all the out-migrants owned their homes prior to implementation of Proposition 13 and subsequently sold these homes upon closure of the base.

### 3.4.5.7 City of Loma Linda

#### Recent Trends

Services provided by the city of Loma Linda are funded principally through the city's general and special revenue funds. In FY 1988, revenues and expenditures of this fund were \$4.7 million and \$5.4 million, respectively (Table 3.4-27). Fund balances were \$1.9 million, representing about 35 percent of expenditures in that year. Expenditures have increased at a faster pace than revenues since FY 1988. By FY 1990, revenues and expenditures amounted to \$6.3 million and \$6.9 million, respectively. Fund balances have subsequently dropped to about \$1.9 million, or about 27 percent of expenditures in that year.

**Table 3.4-27. City of Loma Linda Revenues and Expenditures, General and Special Revenue Funds, FY 1988-1990 (current dollars)**

	1988	1989	1990
<b>Revenues</b>			
Taxes	1,720,623	1,896,188	2,075,571
Special assessments levied	219,949	232,986	280,648
Licenses and permits	344,067	353,543	451,976
Intergovernmental revenue	994,144	1,045,016	1,254,907
Charges for services	935,920	984,955	1,371,127
Fines and forfeits	43,119	89,644	119,260
Use of money and property	360,115	440,436	432,420
Other	74,247	139,005	268,499
Subtotal	4,692,184	5,181,773	6,254,408
<b>Expenditures</b>			
General government	1,651,081	2,018,112	1,385,760
Public safety	1,781,899	2,030,686	2,451,543
Public works	1,101,568	1,199,246	1,726,945
Refuse	578,711	644,169	907,077
Parks	170,828	169,420	177,533
Capital outlay	164,127	88,318	252,900
Subtotal	5,448,214	6,149,951	6,901,758
<b>Fund Balance</b>	1,915,409	2,255,075	1,872,640

Sources: City of Loma Linda, 1988, 1989, 1990.

Tax revenue (property and sales taxes principally) and charges for services are the principal revenue sources of the city. Public safety (law enforcement and fire protection services) and public works services are the

principal expenditure functions of the city. The city has about \$700,000 outstanding general obligation bond indebtedness.

#### Impacts of Closure

Reduced site-related personal income levels, lower employment, and out-migration of approximately 800 residents will result in reduced general and special revenue fund revenues of approximately \$270,000 at closure (see Table 3.4-21). Lower sales tax revenue, intergovernmental revenue, charges for services, and license and permit revenue would be the principal revenue sources affected. These losses would represent about 4 percent of the city's general and special revenue fund budgets.

Similar to the other potentially affected cities, these losses could be offset by lower outlays if city agencies respond by budget cutbacks, either through personnel cutbacks, deferred maintenance and capital outlays, and reduced non-personnel-related outlays, as examples. However, the level of population change in the city, coupled with other non-base-related growth and the service demands associated with this growth, would likely preclude these types of responses by city agencies. Increases in local tax and non-tax revenue schedules and/or service level reductions would be required to maintain a balanced fiscal position if no reuse options are implemented at the base.

These shortfalls also may be offset to a certain degree by the reassessment of property upon the sale of homes previously owned by the out-migrating households and the subsequent increase in valuations and property tax collections due to these sales and revaluations.

#### **3.4.5.8 City of Colton**

##### Recent Trends

Revenues and expenditures of the city's governmental funds (general fund, special revenue fund, capital projects, and debt service funds) were \$21.1 million and \$22.6 million, respectively, in FY 1988 (Table 3.4-28). In FY 1990, fund balances were \$36.6 million, although \$21 million of this amount is reserved for future capital improvements. By FY 1990, revenues had dropped to \$19.1 million while expenditures increased to \$23 million.

Revenue decreases are attributable principally to lower than budgeted tax collections (\$6.6 million budgeted with only \$5.8 million actually received) and lower than budgeted charges for services (\$470,000 budgeted and \$280,000 collected).

For the city's general and special revenue funds, fund balances in FY 1990 were \$2.3 million, representing about 17 percent of expenditures from these

**Table 3.4-28. City of Colton Governmental Funds, Revenues, and Expenditures FY 1988-1989**  
(current dollars)

	1988	1989
<b>Revenues</b>		
Property taxes	5,421,096	4,273,009
Other taxes	4,810,305	5,139,544
Licenses and permits	587,621	835,203
Fines and forfeitures	88,447	81,359
Use of money and property	2,879,029	2,399,211
Intergovernmental	4,138,961	3,431,735
Charges for services	278,589	277,221
General and administrative	1,257,321	1,395,693
Charges		
Utility in-lieu fees	833,767	886,709
Miscellaneous	828,088	389,395
Subtotal	21,123,224	19,109,079
<b>Expenditures</b>		
General government	2,904,189	3,010,328
Public safety	6,450,523	6,997,404
Public works	1,989,497	5,960,074
Parks and recreation	1,208,908	1,259,717
Capital outlay	5,067,227	2,393,278
Debt service	4,202,089	3,382,035
Miscellaneous	758,475	0
Subtotal	22,580,908	23,002,836
<b>Fund Balance</b>	<b>27,958,401</b>	<b>36,587,626</b>

**Note:** Values represent revenues, expenditures, and fund balances of the general, special revenue, debt service, and capital projects funds (see text).

**Source:** Diehl, Evans & Co., 1990.

funds in that year. The remaining portion of the fund balances is accounted for principally through a one-time transfer of revenue bond proceeds into the capital projects account. The city has no general obligation bond indebtedness outstanding.

#### Impacts of Closure

Reduced site-related personal income levels, lower employment, and out-migration of approximately 400 residents will result in reduced general and special revenue fund revenues of approximately \$200,000 at closure (see Table 3.4-21). Lower sales tax revenue, intergovernmental revenue, charges for services, and license and permit revenue would be the principal



revenue sources affected. These losses would represent about 1 percent of the city's general and special revenue fund budgets.

Similar to the other potentially affected cities, these losses could be offset by lower outlays if city agencies respond by budget cutbacks, either through personnel cutbacks, deferred maintenance and capital outlays, or reduced non-personnel-related outlays, as examples. However, the level of population change in the city, coupled with other non-base-related growth and the service demands associated with this growth, would likely preclude these types of responses by city agencies.

### **3.4.6 Other Relevant Resources**

#### **3.4.6.1 Transportation**

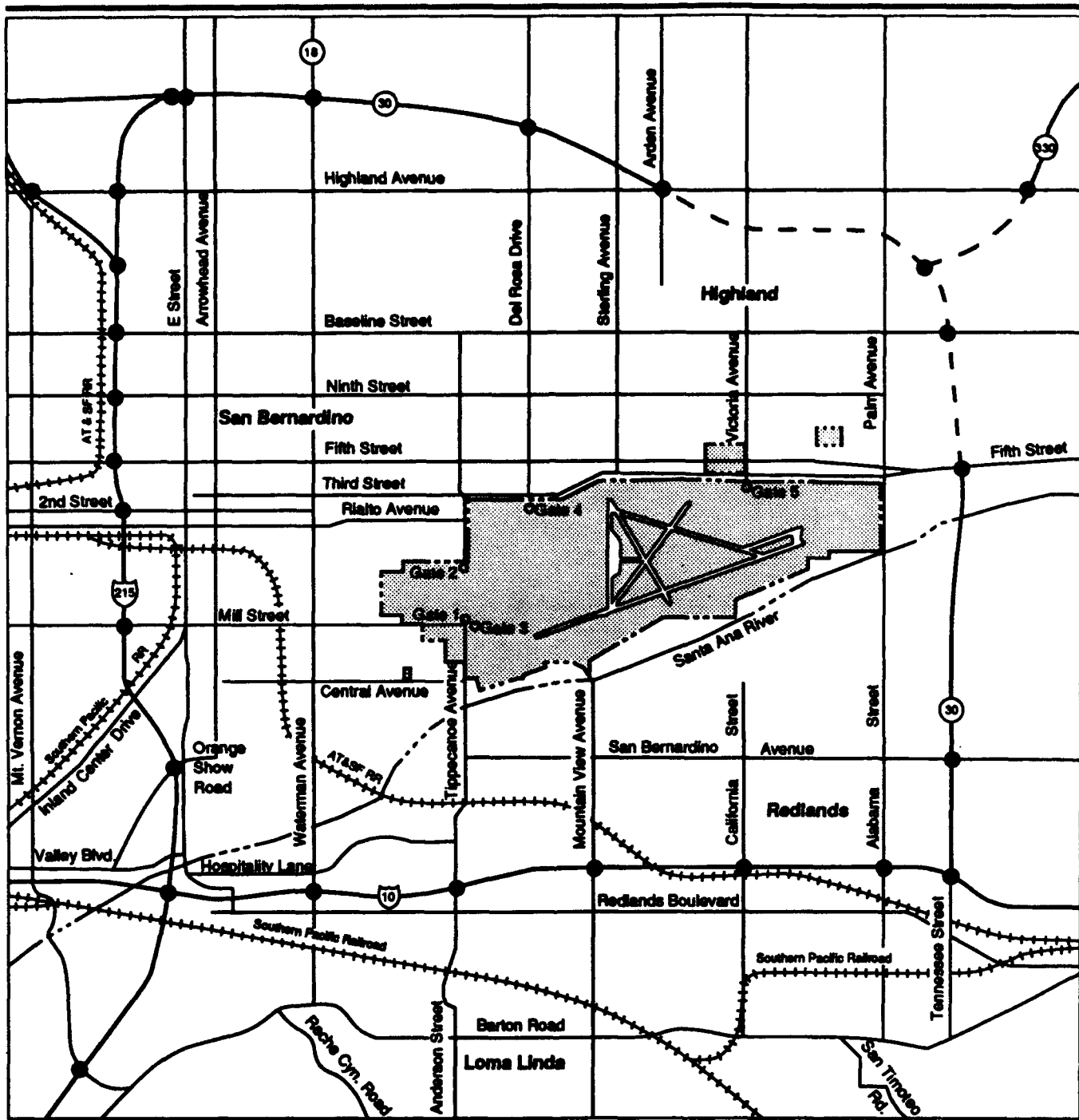
##### **Roadways**

##### **Recent Trends**

Norton AFB is served by a network of interstate, U.S., and state highways and city streets (Figure 3.4-3). I-10 runs east-west approximately 2 miles south of the base. Major interchanges with I-10 are located at Alabama Street, which forms the eastern base boundary; Tippecanoe Avenue, leading to Gates 1 and 3; and Waterman Avenue, a major north-south arterial 1 mile west of the main gate (Gate 4). An east-west alignment of SR-30 exists about 2 to 3 miles north of the base with interchanges at Waterman and Del Rosa avenues. SR-30 currently is being extended east and south to link with I-10 at Tennessee Street, a north-south arterial about 1/2 mile east of the base. When completed by the end of 1993, interchanges with SR-30 are planned at Arden Avenue, Baseline Road, and Fifth Street, in addition to the San Bernardino Avenue interchange southeast of the base. Also, two interchanges are planned on SR-330 and I-10.

The local circulation network consists of arterials, collectors, and local streets. According to both the City of San Bernardino General Plan (City of San Bernardino, 1988), and the San Bernardino County General Plan 1990, Tippecanoe Avenue, Mill Street, Third and Fifth streets, and Alabama/Palm Avenue are classified as major arterials providing both mobility and accessibility to collectors and freeways. Del Rosa Drive and Victoria Avenue are classified as secondary arterials. Furthermore, the San Bernardino County General Plan recommends the upgrading of San Bernardino Avenue to a major arterial and its extension to the west to connect with Pioneer Avenue, and then Orange Show Road.

Access to Norton AFB is provided through five gates, only two of which are open on a 24-hour basis. Gate 1 is located at the signalized intersection of Tippecanoe Avenue/Mill Street. Gate 4 is located at the signalized



#### EXPLANATION

- Highways
- +— Railroads
- - - Freeway Under Construction
- Interchanges
- Interstate Highways
- U.S. Highways
- State Highways
- - - Base Boundary



#### Local Transportation System

Figure 3.4-3

intersection of Third Street/Del Rosa Drive. Two other gates offer limited service because they are open only for certain days and periods. The fifth gate (Gate 2) at Tippecanoe Avenue/C Street is permanently closed. From a capacity point of view, the two main gates (Gates 1 and 4) constitute a bottleneck in the overall circulation system surrounding the base.

The street network on base provides adequate accessibility but limited mobility. Although the network is basically a grid pattern, it has a limited number of through streets and contains several T-intersections. The pavement widths and intersection design for turning are below the current recommended standards. This limits travel speed and traffic capacity of the local network as well as truck movement.

A survey undertaken by Commuter Transportation Services (CTS) revealed that about 75 percent of the employees of Norton AFB live within a 10-mile radius from the base. Of these commuters, 82 percent use their private cars, 9 percent use car pooling and the rest use public transport. The average daily commuter trips to Norton AFB amounted to about 6,000 trips in 1989 (Commuter Transportation Services, 1989).

Traffic counts at Gates 1 and 4 were conducted for this study on June 19, 1991, to determine the morning and afternoon peak periods. During the morning peak hour (7:00 a.m. - 8:00 a.m.), 2,624 vehicles entered the base through these two gates. Each gate handles approximately equal traffic. The afternoon peak hour for outbound traffic accounted for 2,596 vehicles (almost equal to the morning peak).

Traffic volumes on base roads display morning, noon, and afternoon peaks. Heaviest traffic volumes are experienced on Sixth Street (which constitutes an extension to Gate 4 and accommodates the only two signalized intersections on base), C Street (between Tippecanoe and Sixth Street), Tippecanoe Avenue (which constitutes an extension to Gate 1), and A Street (east of Tippecanoe). Truck traffic is heaviest on Sixth Street and sections of Seventh and A streets in the air cargo area and on C Street west of Tippecanoe. The two busiest intersections on base are signalized; that is, intersection Sixth Street/E Street, and intersection Sixth Street/C Street.

The base is serviced by Omnitrans for public transportation in the San Bernardino area. Intercity bus service is provided by Greyhound and Southern California Rapid Transit District from downtown San Bernardino.

Under the various reuse alternatives analyzed in Chapter 4 of this study, some roadways will be given more importance in providing access to the base area. Under these different alternatives, the access to the base may not be restricted to the existing gates or to the existing access roads. The following streets are likely to be affected by various land uses: Del Rosa Drive, Sterling Avenue, Victoria Avenue, Alabama/Palm Avenue, Fifth

Street, Mill Street, Mountain View Avenue, California Street, San Bernardino Avenue, Tippecanoe Avenue, Rialto Avenue, Central Avenue, Redlands Boulevard, Barton Road, Highland Avenue, Waterman Avenue, and Baseline Avenue. For the purpose of this analysis only ten roadway segments were identified as key local roads. These roadway segments would be significantly affected by the various reuse plans. Some on-base roads and key locations on the regional system were selected. Descriptions of preclosure conditions of these roadways and their operating conditions are found in Section 3.2.3 of the *Environmental Impact Statement, Disposal and Reuse of Norton AFB*. Table 3.4-29 shows the daily capacity, daily traffic volume, volume-to-capacity ratio, and LOS of each of the key roadway segments in 1991 (preclosure) and in 1994 (closure).

The critical signalized intersections that would affect traffic operations on key roads and their total daily traffic volumes handled for the year 1987, based on the city of San Bernardino traffic counts, are:

<u>Intersection</u>	<u>Daily Vehicles</u>
Third Street/Del Rosa Drive	19,666
Third Street/Sterling Avenue	17,605
Third Street/Victoria Avenue	10,599
Tippecanoe Avenue/Mill Street	13,543
Tippecanoe Avenue/San Bernardino Avenue	24,564
Tippecanoe Avenue/Hospitality Lane	21,788
Tippecanoe Avenue/Rosewood Avenue	29,025
Waterman Avenue/Hospitality Lane	47,455
Waterman Avenue/Redlands Boulevard	32,315

Currently, all of the above intersections operate under capacity except the intersection at Waterman Avenue/Hospitality Lane, which operates above capacity; it is perhaps the heaviest daily traffic volume in the city of San Bernardino.

#### Impacts of Closure

The closure of Norton AFB and the relocation of its organizations and personnel are expected to generate a significant amount of truck traffic. It has been estimated that some 5,530 truck trips will be required for moving all organizations.

Upon closure of Norton AFB, traffic generated by the working population and residents and dependents will no longer exist, except as generated by the retained military family housing, BMO, and the DMT. Off-site traffic on main access roads will have increased in correlation with the future land

Table 3.4-29. Preclosure and Closure Conditions on Key Roads

	Through Lanes	Daily Capacity Vehicles <sup>(a)</sup>	Facility type Arterial <sup>(b)</sup>	Preclosure (1991)			Closure Baseline (1994)		
				AADT <sup>(c)</sup>	Volume/ Capacity	LOS	AADT <sup>(d)</sup>	Volume/ Capacity	LOS
<b>Local Roads</b>									
Tippecanoe Ave. (between Mill St. and San Bernardino Ave.)	4	40,000	Major	16,300	0.40	B	7,630	0.18	A
Mill St. (between Tippecanoe and Waterman Ave.)	2	15,000	Major	9,000	0.60	C	5,360	0.36	A
Del Rosa Dr.	4	30,000	Second	5,630	0.18	A	770	0.03	A
Third St. (East of Victoria)	4	40,000	Major	7,880	0.20	A	3,910	0.10	A
Third St. (West of Victoria)	4	40,000	Major	7,880	0.20	A	3,910	0.10	A
Victoria Ave. (between Third and Fifth St.)	4	30,000	Second	6,060	0.20	A	5,960	0.20	A
Fifth St. (between Del Rosa Dr. and Victoria) Ave.	2	15,000	Major	8,100	0.54	C	6,530	0.43	B
Fifth St. (between Victoria Ave. and Palm Ave.)	4	40,000	Major	5,630	0.14	A	3,830	0.10	A
Alabama St. (between Palmetto and Third St.)	2	15,000	Major	17,600*	1.17	F	6,850 <sup>(e)</sup>	0.46	B
Palm Ave. (Third and Fifth Sts.)	4	30,000	Major	17,600*	0.59	C	6,850 <sup>(e)</sup>	0.23	A
<b>Key On-Base Roads</b>									
C St. (West of Sixth St.)	2	14,000	NA	7,210	0.51	B	740	0.05	A
Sixth St. Between E and C St.	2	14,000	NA	8,240	0.59	C	850	0.06	A
Sixth St. Between Third and G St.	4	28,000	NA	15,460	0.55	C	1,600	0.06	A
<b>Regional Roads</b>									
I-10, Tippecanoe	8	144,000	Freeway	146,600	1.02	F	157,800	1.1	F
I-215, Inland Center-I-10	10	180,000	Freeway	152,700	0.85	E	164,500	.91	E
SR-30, Del Rosa Dr. <sup>(f)</sup>	6	108,000	Freeway	49,700	0.46	B	53,500	0.5	B

- Notes: (a) Source for roadway capacities: City of San Bernardino General Plan for major roads, and SCAG for highways.  
 (b) Type of facility as defined in the City of San Bernardino General Plan (1988).  
 (c) Source of traffic volume data: City of San Bernardino (city streets), Caltrans (highways), Norton AFB traffic reports (on-base roads), Pharris, 1991 for Alabama/Palm. All volumes are adjusted to 1991 by assuming an annual growth rate of 3 percent. All volume figures are rounded to the nearest 10.  
 (d) Traffic projections on key community roads are based on area population growth. Traffic on highways is assumed to increase at a rate of 2.5-percent annually per Caltrans unpublished model; traffic on base roads is assumed to increase at 1 percent between 1988 and 1991.  
 (e) As of 1992, Alabama/Palm Avenue handles SR-30 traffic due to construction activities. By 1994, SR-30 will be reopened for traffic, and a sharp decrease in Alabama Street traffic is expected.  
 (f) SR-30 is under construction between Highland and I-10. Completion date: end of 1993.  
 NA = Not applicable.

uses off base, the cumulative effects of population growth, and with the alterations that might take place to the road network. Table 3.4-29 shows the performance of key regional, local, and on-site roads for closure conditions. Mill, Fifth, and Alabama streets will experience an improvement in LOS. Similarly, all on-base roads would operate at LOS A, carrying less than 2,000 vehicles per day. Upon closure, all key signalized intersections will experience a net decrease in total daily traffic. Intersections along Tippecanoe/Anderson Avenue will experience the highest reduction. The currently congested area along I-10 and its immediate vicinity, including intersections and ramps at Waterman Avenue, Tippecanoe Avenue, and Redlands Boulevard will likely continue to deteriorate as ambient traffic increases in the absence of adequate remedial actions.

### **Air Transportation**

#### **Recent Trends**

Air transportation includes passenger travel by commercial airline and charter flights, business and recreational travel by private (general) aviation, and priority package and freight delivery by commercial and air carriers. The closest commercial airline service to Norton AFB is Ontario International Airport, located about 20 miles west of the base. There are four general aviation airports in the immediate vicinity of Norton AFB: Rialto, Redlands, and Riverside Municipal and Flabob. According to the Ontario International Airport Authority, air passenger volume at Ontario amounted to 5.4 million annual passengers (MAP) in 1990, a 2.3 percent increase over 1989 levels. The annual cargo at Ontario airport amounted to 273,000 tons in 1990, a 4.3 percent decrease from 1989. The maximum capacity of Ontario airport is estimated under its present condition at 7.35 MAP. In terms of volume, Ontario ranks second after Los Angeles International Airport (43 MAP in 1990) in the Los Angeles basin.

#### **Impacts of Closure**

Upon closure of Norton AFB, there would be a small reduction in travel through Ontario International Airport, resulting from the relocation of personnel and dependents who currently use Ontario. The closure of Norton AFB as well as George AFB will reduce the number of military flights within the regional airspace. This will relieve some of the congestion and provide opportunities for less restricted use of the airspace by existing commercial and general aviation.

## **Railroads**

### **Recent Trends**

At present, the area surrounding Norton AFB is serviced by four daily AMTRAK trains. AMTRAK passenger boardings and alightings at the San Bernardino station amounted to 40,600 in 1990. AMTRAK passenger traffic has increased by 150 percent during the period 1982 through 1990. The Atchison, Topeka, & Santa Fe and Southern Pacific railroads provide rail freight service, and maintain service facilities and freight yards in the San Bernardino area. The Southern Pacific has the largest classification yard (a holding area where rail cars are sorted and dispatched to various destinations) in the western United States in Colton, California. A rail spur once linked the base with the railroad network but is now abandoned.

### **Impacts of Closure**

Upon closure of Norton AFB, there would be a small reduction in AMTRAK ridership in San Bernardino. This reduction would be quickly overcome by the projected population growth in the ROI.

**3.4.6.2 Utilities.** This section summarizes the condition of utilities on Norton AFB and in the ACS. The ACS for accessing utility systems is made up of the service areas of each utility purveyor servicing communities most affected by the closure and reuse of Norton AFB. A more detailed presentation of these conditions is available in the accompanying EIS considering the environmental effects of the disposal and reuse of Norton AFB.

## **Water Supply**

### **Recent Trends**

Norton AFB currently derives its water from four on-base wells. During emergencies or periods of high demand, water can be delivered through existing interties with the San Bernardino Valley Municipal Water District. For the past 5 years the base has consumed an average of about 2.3 million gallons per day (MGD).

Three of the four wells are located in the main base area. The fourth well is located at the northeast end of the base and supplies base housing. Each of the wells has been rehabilitated in the past 5 years and is in good condition. The pumps associated with these wells vary in condition from good to poor. There are three storage tanks on base: two are elevated and the other is a ground level tank. The ground level tank is in poor condition due to corrosion. The combined capacity for all three tanks is 924,000 gallons. The distribution system consists of 34,000 linear feet of steel/cast iron pipe

and 275,400 linear feet of polyvinyl chloride (PVC) pipe; all of the pipe is in good condition.

Increased water pumpage at Norton could result in a water level cone of depression surrounding the site. The cone of depression would vary in size, depending on reuse activity. Very shallow wells in the region could experience lower water levels due to on-site pumping (see Water Resources, Section 3.4.2 and 4.4.2 of the EIS).

Water purveyors in the ACS (Baseline Gardens, Cardiff Farms, Muscoy, Victoria Farms, East Valley, and San Bernardino Valley Municipal Water District) obtain most of the water from groundwater sources but have rights to surface water from the state. Community distribution systems are in good condition and adequately provide water to customers.

#### Impacts of Closure

Based on decreases in population associated with Norton AFB, total water demand in the ACS would be reduced by approximately 2.2 percent below by the San Bernardino Valley Municipal Water District projections (Table 3.4-30). Projections assume that water demand rates are proportional to the population being served in the ACS and on the base.

Table 3.4-30. Estimated Water Demand within the ACS (MGD)

	1988	1991	Closure
Implicit forecast	75.0	80.0	84.9
Closure baseline	75.0	79.9	83.1
Change from forecast	0.0	-0.1	-1.8
Percent change	0.0	-0.1	-2.2

Source: San Bernardino Valley Municipal Water District, 1990.

#### **Wastewater**

##### Recent Trends

The U.S. Air Force has contracted with the City of San Bernardino Water Department for sanitary wastewater treatment at the San Bernardino Regional Wastewater Treatment Plant (SBRWTP), located on Blood Bank Road in San Bernardino. This plant serves the communities of San Bernardino, Loma Linda, Highland, and Norton AFB and various portions of unincorporated areas of the county. The cities of Redlands and Colton process wastewater independent of SBRWTP. Redlands' facility has a 9 MGD capacity and services only the city area. Colton's facility has a



6.4 MGD capacity and serves Colton, Grand Terrace, and portions of unincorporated San Bernardino County. The City of San Bernardino Public Works Department owns, operates, and maintains the sewage collection system.

The base currently produces an average level of 0.35 MGD of sanitary wastewater and approximately 0.25 million gallons per week of industrial wastewater. The collector system on base is about 40 years old and in good condition.

The communities using SBRWTP are serviced by the city collector system and regional treatment plant. The collector system is generally in good repair and is maintained as required by the Public Works Department (Moreno, 1991). The SBRWTP has expansion projects currently in the works and has plans for capacity expansion after 1995, which will upgrade the plant's treatment capacities in an effort to modify the current system and meet increasing demand in the region. The plant currently receives an average of about 25 MGD of influent, treating all influent to secondary standards and 3 MGD of this total to tertiary standards (Roe, 1991). This represents 70 percent of the plant's current capacity of 33 MGD.

#### Impacts of Closure

Based on the forecast population for the ACS associated with Norton AFB and the implicit future rates of per-capita wastewater treatment demand indicated by SBRWTP, the forecast would average 36.9 MGD by closure (Table 3.4-31). This is a reduction of 1 MGD from the extrapolated SBRWTP projection for 1994. The projections assume that wastewater flow rates are proportional to the population being served in the ACS and on the base. Wastewater flows at Norton AFB will decrease slightly as the drawdown of personnel occurs.

**Table 3.4-31. Estimated Wastewater Generation within the ACS (MGD)**

	1988	1991	Closure
Implicit forecast	28.1	33.0	37.9
Closure baseline	28.1	33.0	36.9
Change from forecast	0.0	0.0	-1.0
Percent change	0.0	0.0	-2.7

Source: San Bernardino Valley Municipal Water District, 1990.

## **Solid Waste**

### **Recent Trends**

Solid waste from Norton AFB and some of the cities in the ACS is disposed in the Colton, Mid-Valley, and San Timoteo landfills. These sites are owned and operated by the county of San Bernardino. Cal Disposal is presently under contract to provide solid waste disposal for Norton AFB. It collects an average annual total of about 7,000 cubic yards from the base. The base contributes approximately 1.5 percent of total waste to each of the aforementioned landfills.

Colton landfill is approximately 10 miles to the southwest of the base, and is expected to close in 1997, at present site disposal rates. The Mid-Valley landfill is located approximately 14 miles west of the base near the city of Fontana and is expected to close in 2001, at present site disposal rates. San Timoteo landfill is located near the city of Redlands, approximately 7 miles to the southeast of the base. It is expected to close in 2022, at present site disposal rates.

### **Impacts of Closure**

Based on forecast population in the county and the implicit future rates of per-capita solid waste disposal needs indicated by San Bernardino Solid Waste Management Department, the county forecast predicts an average of 3.07 million cubic yards annually by closure (Table 3.4-32). This reduction is approximately 1 percent lower than the extrapolated county projection for 1994. The county is currently in the preliminary stages of a study for future use of Mid-Valley and San Timoteo landfills. A final report is expected at the end of the year. This study will be part of the county's 5-year site review process and will suggest closure and expansion for each landfill (Bellandi, 1991). It is estimated that the landfill life-expectancies will be extended less than 1 year for each landfill due to Norton's closure. The possible demolition of existing Norton AFB buildings may have an impact on longevity of the landfills as they can accept clean construction/demolition materials.

## **Energy**

### **Recent Trends**

**Electricity.** Norton AFB electricity is supplied by the Inland District of Southern California Edison (SCE). For the past 5 years, the base has consumed an average of approximately 403.4 kilowatt-hours (kwh) per day. This represents less than 1 percent of the division's 6,477-megawatt (MW) total capacity. Much of the electrical distribution system was originally installed at Norton AFB in the 1940s and consists of 12 and 34.5 kilovolt

**Table 3.4-32. Estimated Solid Waste Disposal within the ACS (millions of cubic yards per year)**

	1988	1991	Closure
Implicit forecast	2.39	2.75	3.10
Closure baseline	2.39	2.75	3.07
Change from forecast	0.00	-0.01	-0.03
Percent change	0.00	0.0	-1.0

Source: San Bernardino County Solid Waste Management Department, 1991.

(kV) overhead and underground lines. The overall system is generally in poor condition due to age. However, some of the system has been retrofitted with neoprene cable and that portion is in good condition. The communities in the ACS are adequately supplied by SCE. However, SCE can curtail service to customers classified for voluntary interruptible service. In the east San Bernardino Valley there are customers with interruptible service. SCE has not curtailed service to these customers within the last several years and does not anticipate future curtailments due to population growth. The future growth of the region does not limit SCE's ability to meet demand.

**Natural Gas.** The Southern California Gas Company (SCG) provides natural gas service to Norton AFB and the surrounding region. The base uses an average of 7,470 therms per day. The original on-base distribution system was installed in the 1940s and consists of approximately 47,500 linear feet of steel pipe (with some PVC lines servicing residences). The system has no corrosion or leakage problems and is in good condition. The communities in the ACS receive natural gas from SCG. The distribution system has no problem in meeting area demand, and future population growth in the area will not create problems for SCG. Similar to electricity service, SCG can curtail natural gas service through voluntary interruptible service. There are less than 25 non-core (interruptible service) customers in the east San Bernardino Valley. Since February 1989, curtailment has only occurred once. SCG does not anticipate any curtailment due to future industrial or commercial growth.

**Steam/Water Heating System.** Buildings 754, 716, and 249 are used to house boilers for steam heating. There are other boilers on base for water heating in support of aircraft maintenance. Building 754's boilers are out of service due to mechanical reasons. Building 716 services the majority of the base not heated by natural gas furnaces, with three feed lines. The feed/distribution lines are in extremely poor condition due to corrosion. The system has recently been converted to natural gas from fuel. However, the South Coast Air Quality Management District (SCAQMD) regulations still require several of the boiler burners to be retrofitted to meet NO<sub>x</sub> standards.

### Impacts of Closure

**Electricity.** SCE has stated that they anticipate being able to continue providing service to the area with few limitations for delivery of electricity in the approximately 700 square miles of the Inland District. The California Energy Commission (1990) prepared a long-term forecast (through 2009) of electricity demand within the entire SCE service area. The forecast was used to obtain an average per-capita electricity demand for future years within the region's service area. This factor was multiplied by the long-term forecast of population within the ACS to obtain projected future electricity demand for the area. Using the same per-capita rates, electricity demand within the area associated with the base closure was estimated from the projected population in the region (Table 3.4-33). Short-term decreases in electricity demand associated with Norton AFB closure of about 2.4 percent would be rapidly overcome by population increases, and accompanying electric meter hook-ups, projected for the San Bernardino area.

**Table 3.4-33. Estimated Electrical Demand within the ACS (MWH/day)**

	1988	1991	Closure
Implicit forecast	5,532	6,187	6,566
Closure baseline	5,432	6,185	6,406
Change from forecast	0	-2	-160
Percent change	0.0	0.0	-2.4

Sources: Burns, 1991; California Energy Commission, 1990.

**Natural Gas.** SCG anticipates being able to continue providing regional service within the company's approximately 7,900 square miles in the Inland Division. The California Energy Commission (1990) prepared a long-term forecast (through 2009) of natural gas demand within the entire SCG's service area. The forecast was used to obtain an average per-capita natural gas demand for future years within the region's service area. This factor was multiplied by the long-term forecast of population within the ACS to obtain projected future natural gas demand. Using the same per-capita rates, natural gas demand within the area associated with the base closure was estimated from the projected population in the region (Table 3.4-34). Short-term decreases in natural gas demand associated with Norton AFB closure of less than 1 percent would be rapidly overcome by population increases and accompanying gas meter hook-ups, projected for the San Bernardino area. Curtailment of industrial and commercial non-core customers is not expected.

**Table 4.3-34. Estimated Natural Gas Demand within the ACS  
(thousands of therms/day)**

	1988	1991	Closure
Implicit forecast	1,348	1,537	1,726
Closure baseline	1,348	1,537	1,716
Change from forecast	0	0	-10
Percent change	0.0	0.0	-0.6

Source: Flum, 1991.

**Steam/Water Heating System.** Due to the condition of this system it is highly unlikely that any portion of the system can be reused after the closure of Norton AFB.

#### **3.4.6.3 Airspace**

##### **Recent Trends**

In 1990, approximately 42,000 aircraft operations (landings and takeoffs) were conducted at Norton AFB. Most of these operations were air-cargo type and transitioned to and from the en route traffic system controlled by the Los Angeles Air Route Traffic Control center.

The Norton Airport Radar Service Area (ARSA) is a designated airspace area within a 5-mile radius of Norton AFB, excluding a 1.5-nautical mile area west of the Redlands Municipal Airport. Both instrument and visual flight rule aircraft operating through the ARSA must be in contact with the Norton AFB tower. This is to ensure air traffic control is aware of all aircraft within the vicinity of the base traffic patterns. General aviation aircraft operating from the adjacent airports in the area normally remain clear of ARSA, simply to avoid traffic in the Norton patterns. Such route diversions are normally not excessive and are generally the standard practice around busier civil and military airports. This also alleviates the need to contact the Norton AFB control tower, particularly when some aircraft are not radio-equipped.

The eastern flight path to Ontario International Airport overlaps with the instrument approach course to the Rialto Municipal Airport and Norton AFB. During busier periods when there are multiple approaches to the flight path, routine training approaches to Norton AFB are usually routed south to March AFB, where airspace is normally less congested.

##### **Impacts of Closure**

The number of flights into and out of Norton AFB will diminish through the end of 1992, with all aviation activity at the base scheduled to cease in

1994. Upon closure, all designated air traffic control airspace areas and published instrument procedures for Norton AFB will be cancelled. The release of these areas will reduce air traffic congestion significantly where the approaches to Ontario and Norton overlap. General aviation aircraft operating under visual flight rules would be able to transit more freely through airspace over Norton AFB without any requirements to contact an air traffic control agency. This could benefit pilots operating from local airports; however, efficiency gains appear to be small.

Closure would make additional local airspace available for other aviation and non-aviation use, contingent upon the compatibility with other air traffic activities in the region. Examples of other aviation uses are hot air ballooning, gliding, hang gliding, and acrobatic flying. Non-aviation use examples are high-rise structures, e.g., buildings, antennas, theme park rides, and observation towers.

Closure of George AFB makes airspace available for other uses in that area. That airspace is currently under the control jurisdiction of the FAA radar approach control at Edwards AFB and does not overlap or interfere with Ontario TRACON's airspace jurisdiction. No gains in efficiency of airspace use at Norton AFB would be realized from concurrent closure of George AFB.

## **4.0 SOCIOECONOMIC EFFECTS OF PROPOSED ACTION AND REUSE ALTERNATIVES**

---

This chapter discusses the potential socioeconomic impacts associated with the Proposed Action and three alternatives (Airport with Mixed Use, Aircraft Maintenance Center, and Non-Aviation) for reuse of Norton AFB. The purpose of the study is to identify and analyze the major socioeconomic issues related to each of the four possibilities for future activity at the base and compare the impacts of these alternatives with each other.

To help identify potential socioeconomic impacts associated with the disposal of Norton AFB, this study addresses a range of reasonable reuse alternatives. The Air Force has adopted the redevelopment plans developed by the IVDA as the Proposed Action for the purpose of concluding the required analysis. In addition, the Air Force has also analyzed the impacts associated with other reasonable reuse alternatives. These include two aviation reuse proposals, a non-aviation reuse, and a no-action alternative that involves no reuse. Actual decisions on reuse of the property will be made by its recipients subsequent to conveyance.

Descriptions of the impacts of the Proposed Action and three development alternatives are provided sequentially for each of seven major issues: Economic Activity, Population, Housing, Public Services, Public Finance, Transportation, Utilities, and Airspace. The accompanying *Environmental Impact Statement, Disposal and Reuse of Norton Air Force Base, California*, provides more detailed descriptions of impacts for Transportation, Utilities, and Airspace. The description of impacts of the No-Action Alternative is essentially the same as post-closure conditions.

**Context of Analysis.** This analysis addresses the timing of impacts associated with each of the various alternative plans for future disposition of the base. The analysis covers a time period extending 20 years after the first full year of closure of Norton AFB, and results are generally presented for each of the alternatives for the years 2000 (5 years after the first year of closure), 2005 (10 years after the first year of closure), and 2015 (20 years after the first year of closure).

Of particular importance in this analysis are "site-related" impacts of the Proposed Action and alternatives. Site-related impacts are defined to include both direct on-site and secondary off-site impacts of reusing the base. For example, in terms of the population impact expected by reuse of the base, the site-related population impact refers to the number of people who would relocate to the region in response to the employment opportunities generated by each reuse alternative. This chapter focuses on

these site-related regional population impacts and their subsequent impact on other socioeconomic variables.

This regional population impact can be smaller than the number of people expected to reside in the proposed housing to be constructed on the base (for those alternatives where housing development is proposed). While some of this housing demand would come from project-related in-migrants, most of it would be from existing residents as well as new residents associated with normal growth in the region. This distinction (site-related population versus actual on-site population) is discussed, as appropriate, in each of the resource-specific sections.

#### **4.1 ECONOMIC ACTIVITY**

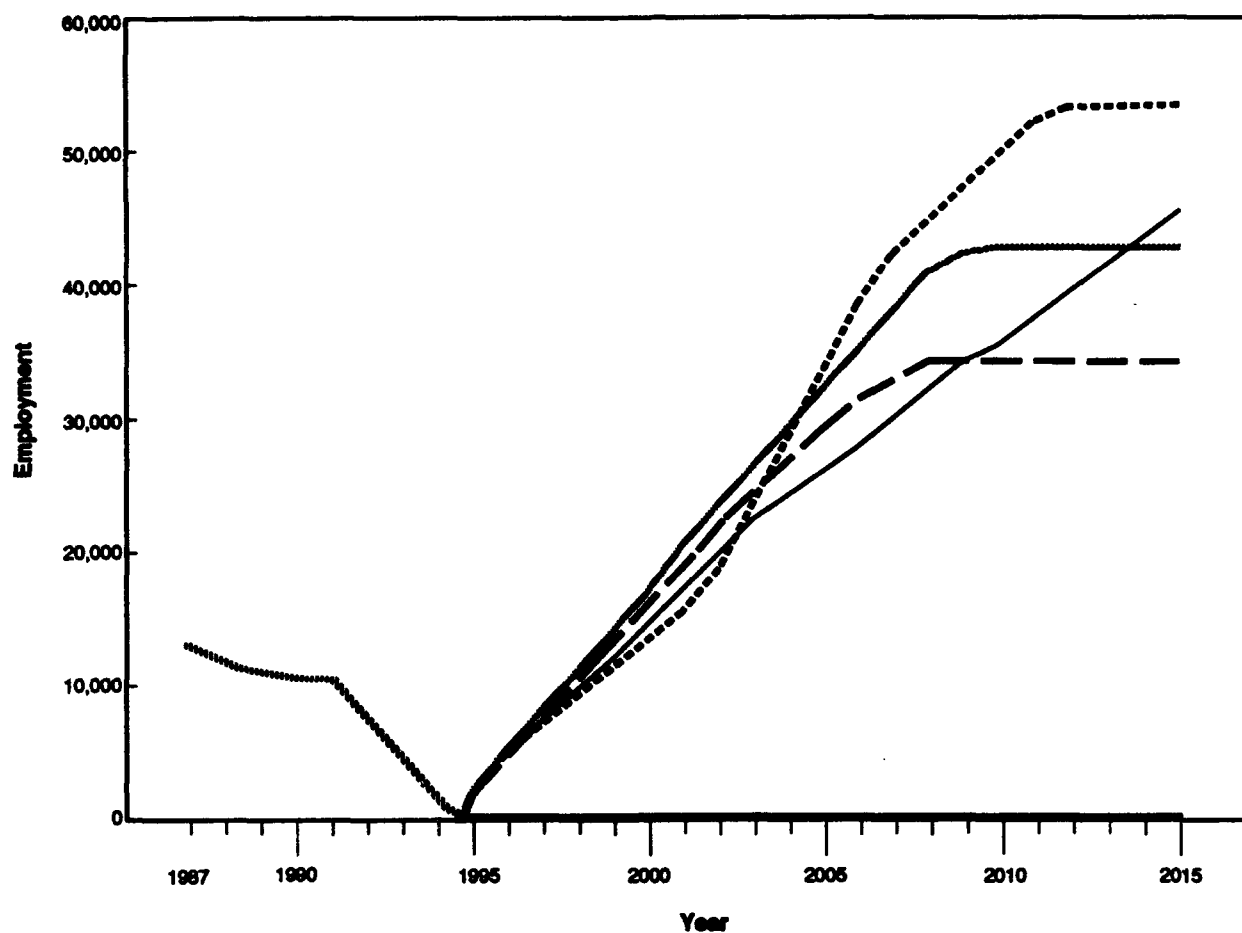
In the absence of any reuse activities at Norton AFB (and George AFB), total employment in the two-county ROI is projected to grow from about 1,060,000 jobs in 1995 to almost 1,705,000 jobs in 2015, based on independent projections prepared by SCAG. This is a projected increase of 2.4 percent annually. This post-closure projection provides a reference for comparison of the employment impacts of base reuse actions.

The greatest economic impacts are projected to occur under the Proposed Action, followed by the Non-Aviation Alternative, the Airport with Mixed Use Alternative, and the Aircraft Maintenance Center Alternative. All reuse alternatives would generate economic impacts greater than those associated with Norton AFB in 1987 (about 12,600 direct and secondary jobs), a full year before it was announced that the base would be closing. These impacts would occur gradually under each alternative.

##### **4.1.1 Proposed Action**

More than 400 direct construction jobs would be generated during the first 5 years after base closure under the Proposed Action. These construction jobs would increase to nearly 1,000 jobs by 2005, but would approach zero by the end of the 20-year period. It was assumed that a large number of aviation-related activities (aircraft maintenance, as an example) would first become operational immediately after closure, and by 2000 base reuse activity would create 6,800 direct on-site jobs. Direct employment would increase to more than 30,300 by 2015 (Table 4.1-1 and Figure 4.1-1). Long-term on-site economic activities would provide the stimulus for an additional 23,000 secondary jobs throughout the ROI by 2015. By build out, total direct and secondary employment impacts would represent almost 6 percent of current ROI employment levels. Regional direct and secondary earnings associated with the Proposed Action are estimated to reach more than \$1.3 billion annually by 2015.





#### EXPLANATION

- Post-Closure/No-Action
- ..... Proposed Action
- Airport with Mixed Use
- - - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

#### ROI Employment Impacts - Proposed Action and Alternatives

Figure 4.1-1

**Table 4.1-1. Site-Related Employment and Earnings Projections for the ROI and ACS - Proposed Action**

	2000	2005	2015
<b>Reuse-related jobs</b>	<b>14,052</b>	<b>33,806</b>	<b>53,226</b>
<b>Direct jobs</b>	<b>7,269</b>	<b>18,607</b>	<b>30,264</b>
Construction	418	985	0
Operation	6,851	17,622	30,264
<b>Secondary jobs</b>	<b>6,783</b>	<b>15,199</b>	<b>22,962</b>
ACS	2,190	4,857	7,436
Rest of ROI	4,593	10,342	15,526
<b>Earnings (million \$1990)</b>	<b>373.8</b>	<b>862.7</b>	<b>1,307.5</b>
<b>Direct earnings</b>	<b>217.5</b>	<b>497.9</b>	<b>762.1</b>
Construction	12.6	29.8	0.0
Operation	204.9	468.1	762.1
<b>Secondary earnings</b>	<b>156.3</b>	<b>364.8</b>	<b>545.4</b>
<b>No-Action (closure-2015)*</b>			
Site-related jobs	70	70	70
Earnings (million \$1990)	1.6	1.6	1.6
<b>Proposed Action increase over No-Action (closure-2015)*</b>			
Site-related jobs	13,982	33,737	53,156
Earnings (million \$1990)	372.2	861.1	1,305.9

\* Includes both direct and secondary employment and earnings impacts.

#### **4.1.2 Airport with Mixed Use Alternative**

More than 450 direct construction jobs would be generated during the first 5 years after base closure under this alternative. These construction jobs would decrease to zero by the end of the 20-year period. It was assumed that some aviation-related activity would become operational immediately after closure, and by 2000, base reuse activity would create more than 8,500 direct on-site jobs. Direct employment would increase to almost 23,000 by 2015 (Table 4.1-2 and Figure 4.1-1). Long-term on-site economic activities would provide the stimulus for an additional 19,900 secondary jobs throughout the ROI by 2015. By build out, total direct and secondary employment would represent about 4 percent of current ROI employment levels. Regional direct and secondary earnings associated with this alternative are estimated to reach nearly \$1.1 billion annually by 2015.

#### **4.1.3 Aircraft Maintenance Center Alternative**

By 2000, over 520 direct construction jobs would initially be created under the Aircraft Maintenance Center Alternative. These construction jobs would

**Table 4.1-2. Site-Related Employment and Earnings Projections for the ROI and ACS - Airport with Mixed Use Alternative**

	2000	2005	2015
<b>Reuse-related jobs</b>	<b>17,357</b>	<b>32,443</b>	<b>42,724</b>
Direct jobs	8,979	17,204	22,780
Construction	452	452	0
Operation	8,527	16,751	22,780
Secondary jobs	8,378	15,239	19,944
ACS	2,546	4,697	6,164
Rest of ROI	5,832	10,543	13,780
<b>Earnings (million \$1990)</b>	<b>448.8</b>	<b>847.2</b>	<b>1,109.1</b>
Direct earnings	254.1	481.4	631.8
Construction	13.7	13.7	0.0
Operation	240.4	467.7	631.8
Secondary earnings	194.8	365.8	477.4
 <b>No-Action (closure-2015)*</b>			
Site-related jobs	70	70	70
Earnings (million \$1990)	1.6	1.6	1.6
 <b>Airport with Mixed Use Alternative increase over No-Action (closure- 2015)*</b>			
Site-related jobs	17,287	32,373	42,655
Earnings (million \$1990)	447.2	845.6	1,107.5

\* Includes both direct and secondary employment and earnings impacts.

steadily decline to zero by 2015. Some aviation-related activity would become operational immediately after closure, and by 2000, this activity would create nearly 8,100 direct on-site jobs. Direct employment would increase to more than 18,100 by 2015 (Table 4.1-3 and Figure 4.1-1). Reuse activities expected to be operating at the Norton AFB site in 2015, under this alternative, would provide the stimulus for an additional 16,200 secondary jobs throughout the ROI. By build out, total employment impacts would represent about 3 percent of current ROI employment levels. Direct and secondary annual earnings in the region are estimated to approach a level of \$900 million by 2015, under this alternative.

#### **4.1.4 Non-Aviation Alternative**

More than 1,100 direct construction jobs would be generated during the first 5 years after base closure under this alternative. These construction jobs would remain relatively stable for the next 15 years, dipping to slightly less than 300 jobs by 2015. Business activities would first become operational soon after closure, and by 2000, such activity would create

**Table 4.1-3. Site-Related Employment and Earnings Projections for the ROI and ACS - Aircraft Maintenance Center Alternative**

	2000	2005	2015
<b>Reuse-related jobs</b>	<b>16,923</b>	<b>29,482</b>	<b>34,321</b>
<b>Direct jobs</b>	<b>8,600</b>	<b>15,363</b>	<b>18,122</b>
Construction	522	319	0
Operation	8,077	15,045	18,122
<b>Secondary jobs</b>	<b>8,323</b>	<b>14,119</b>	<b>16,198</b>
ACS	2,532	4,357	4,986
Rest of ROI	5,791	9,762	11,212
<b>Earnings (million \$1990)</b>	<b>446.6</b>	<b>786.2</b>	<b>899.2</b>
<b>Direct earnings</b>	<b>252.7</b>	<b>446.6</b>	<b>511.1</b>
Construction	15.8	9.6	0.0
Operation	236.9	436.9	511.0
<b>Secondary Earnings</b>	<b>193.9</b>	<b>339.6</b>	<b>388.2</b>
 <b>No-Action (closure-2015)*</b>			
<b>Site-related jobs</b>	<b>70</b>	<b>70</b>	<b>70</b>
<b>Earnings (million \$1990)</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>
 <b>Aircraft Maintenance Center Alternative Increase Over No-Action (closure-2015)*</b>			
<b>Site-related jobs</b>	<b>16,853</b>	<b>29,413</b>	<b>34,251</b>
<b>Earnings (million \$1990)</b>	<b>444.9</b>	<b>784.6</b>	<b>897.6</b>

\* Includes both direct and secondary employment and earnings impacts.

more than 6,900 direct on-site jobs. Direct employment would increase to more than 25,100 by 2015 (Table 4.1-4 and Figure 4.1-1). Total direct (construction and operation) employment associated with reuse activity at the Norton AFB site in 2015 would provide the stimulus for an additional 19,800 secondary jobs throughout the ROI. By build out, total employment impacts would represent about 5 percent of current ROI employment levels.

Regional direct and secondary earnings associated with this alternative are estimated to exceed \$1 billion annually by 2015.

#### **4.1.5 No-Action Alternative**

Employment and earning impacts under the No-Action Alternative would be those described for closure in Section 3.4.1.

**Table 4.1-4. Site-Related Employment and Earnings Projections for the ROI and ACS - Non-Aviation Alternative**

	2000	2005	2015
Reuse-related jobs	15,142	26,106	45,237
Direct jobs	8,045	14,283	25,467
Construction	1,139	894	278
Operation	6,906	13,389	25,189
Secondary jobs	7,097	11,823	19,769
ACS	1,974	3,406	5,929
Rest of ROI	5,123	8,417	13,841
Earnings (million \$1990)	360.8	635.1	1,082.5
Direct earnings	195.5	349.1	607.6
Construction	34.4	27.0	8.4
Operation	161.0	322.1	599.2
Secondary earnings	165.3	286.0	474.9
No-Action (closure-2015)*			
Site-related jobs	70	70	70
Earnings (million \$1990)	1.6	1.6	1.6
Non-Aviation Alternative Increase Over No-Action (closure-2015)*			
Site-related jobs	15,072	26,037	45,167
Earnings (million \$1990)	359.2	633.5	1,080.9

\* Includes both direct and secondary employment and earnings impacts.

## 4.2 POPULATION

If no reuse of Norton AFB occurs, total population of the ROI is anticipated to increase from 2,977,000 in 1995 to 4,653,000 in 2015, based on SCAG projections adjusted to account for recent census data and the closure of Norton AFB and George AFB. This is an average projected increase of 2.3 percent annually. The post-closure projections provide a reference for comparing the population impacts of alternative reuse plans. As previously noted, the BMO and its contractor work force are expected to remain at the base. March AFB personnel assigned to Norton AFB family housing would remain. These personnel were not included in the closure and reuse analysis. All personnel associated with the disposal and caretaker activities at the base are assumed to be local hires.

The ROI currently contains a large number of people who commute to and from the region for work. Under the assumption that people would rather work near their residences, the abundance of workers in the ROI would enable many of the jobs created under various reuse alternatives to be filled

by individuals already residing in the region (see Section 3.3.1). This would lead to a phenomenon where the number of workers in-migrating to the ROI and ACS is less than the number of jobs created. Moreover, many aircraft-related businesses in the greater Los Angeles area have sized down, making a large and experienced labor pool available. The proportion of in-migrants expected to fill various types of jobs is presented in Table 3.3-1. The number of individuals commuting on a weekly or daily basis to jobs in the ROI also tends to reduce the number of expected in-migrants to the region. This is especially important during short-term construction peaks.

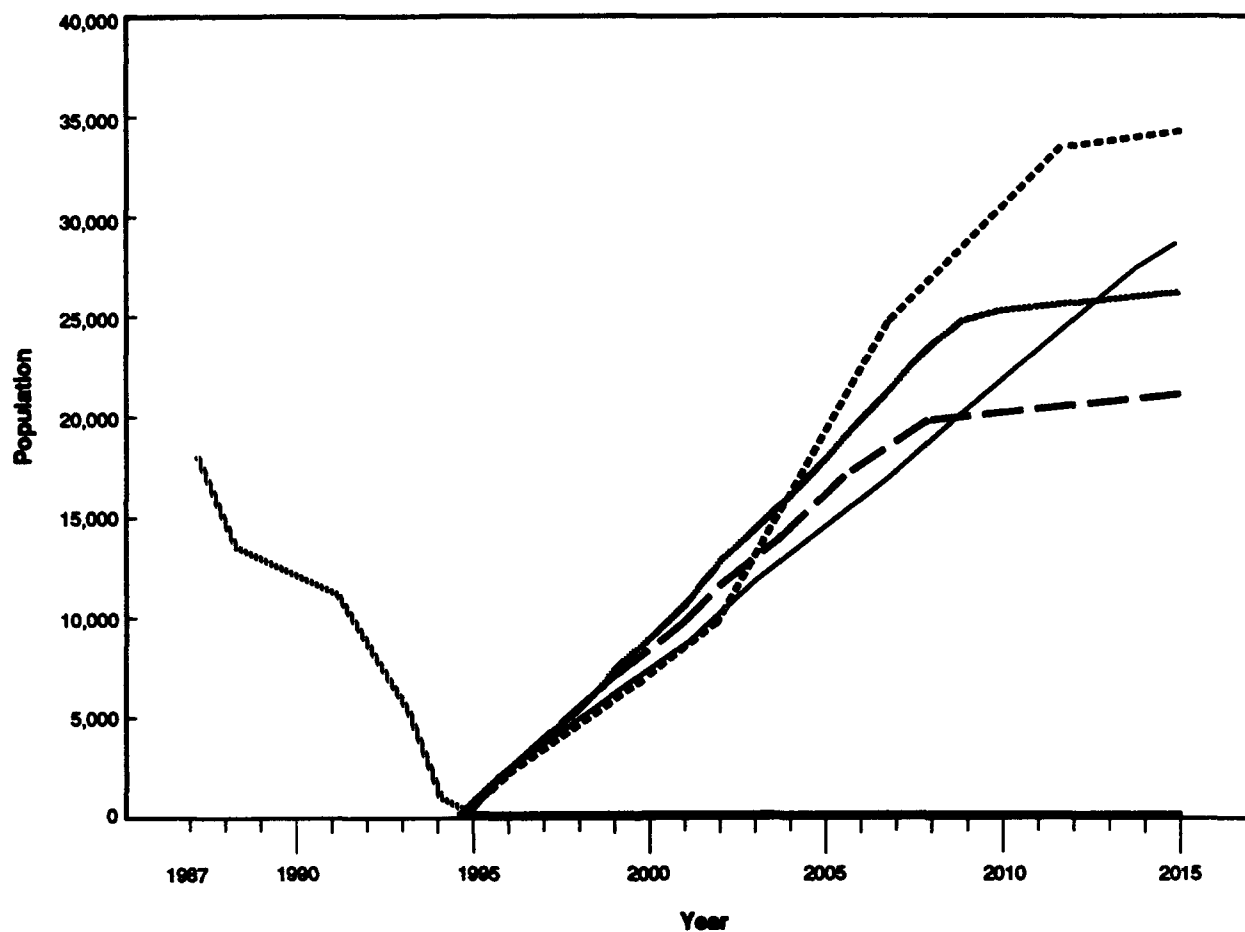
The greatest population impacts at both regional and local levels are projected to occur under the Proposed Action, followed by the Non-Aviation Alternative. This will generate population impacts greater than those associated with Norton AFB operations in 1987 (19,200), the year before it was announced that the base would be closing. Impacts would occur gradually under these two alternatives, not surpassing base-related population impacts until after 2005.

#### **4.2.1 Proposed Action**

Population impacts of the Proposed Action are defined to include all individuals directly and indirectly associated with the Norton AFB site who would not be in the ROI were it not for activities at the site. Population impacts comprise these individuals as well as their dependents. The remaining individuals associated with on-site activities are assumed to be from within the ROI and would reside in the region regardless of activities at the base. These local residents are expected to fill many site-related jobs; thus, local hiring would reduce the in-migration associated with base reuse.

In 2000, the Proposed Action would create a population impact in the ROI of about 7,200 persons, approximately 0.3 percent of the 1990 ROI population (Table 4.2-1). These individuals would be newcomers to the region who would not reside there unless this alternative were implemented. Since Norton AFB is scheduled to close in 1994, the total population impact of the Proposed Action in 2000 includes no individuals attributable to residual base operations. Population impacts of the Proposed Action would increase as the base reuse activities become fully operational (Figure 4.2-1), reaching nearly 34,300 persons by 2015 (about 1.3 percent of 1990 ROI population).

The two counties in the ROI are anticipated to experience in-migration both in the short and long term under the Proposed Action, with the majority of associated population impacts projected for San Bernardino County (in excess of 81 percent for each impact year considered). About 5,900 persons would migrate to San Bernardino County by 2000 (Table 4.2-1). By 2015, more than 28,000 persons are anticipated to move to San Bernardino County as a consequence of adopting the Proposed Action. By 2015, more



#### EXPLANATION

- Post-Closure/No-Action
- ..... Proposed Action
- Airport with Mixed Use
- - - Aircraft Maintenance Center
- Non-Aviation
- ..... Proclosure

#### ROI Population Impacts - Proposed Action and Alternatives

Figure 4.2-1

**Table 4.2-1. Proposed Action: Total Regional Population Impacts -  
Counties and Selected Cities**

	2000	2005	2015
<b>San Bernardino County</b>	<b>5,863</b>	<b>15,487</b>	<b>28,032</b>
<b>ACS Total</b>	<b>4,291</b>	<b>11,401</b>	<b>20,730</b>
San Bernardino	2,197	5,837	10,612
Redlands	1,107	2,944	5,355
Highland	461	1,224	2,226
Loma Linda	319	848	1,543
Colton	207	548	994
Rest of County	1,572	4,086	7,302
<b>Riverside County</b>	<b>1,357</b>	<b>3,515</b>	<b>6,257</b>
<b>Total</b>	<b>7,220</b>	<b>19,002</b>	<b>34,289</b>

**Note:** Rest of county includes both incorporated places and unincorporated areas throughout San Bernardino County.

than 6,200 persons would in-migrate to Riverside County as a consequence of adopting the Proposed Action.

After initially losing population when Norton AFB closes, the communities within the ACS would gain population, with San Bernardino leading in absolute growth, and Redlands and Highland experiencing noteworthy population gains as well (Table 4.2-1). By 2000, the population impact in the city of San Bernardino is projected to be about 2,200, while the impact in Redlands would approach 1,100. By 2015, these impacts are projected to increase to about 10,600, and 5,300, respectively. These impacts are small in relative terms (i.e., about 6.5 percent of 1990 baseline population in San Bernardino and 8.9 percent of 1990 population in Redlands).

#### **4.2.2 Airport with Mixed Use Alternative**

The Airport with Mixed Use Alternative would lead to the in-migration of more than 8,900 persons to the ROI by 2000 (Table 4.2-2). These individuals would consist of newcomers, including dependents, who would not reside in the region were it not for the implementation of this reuse alternative. Population impacts of the Airport with Mixed Use Alternative are projected to increase over the long term, reaching about 26,300 persons by 2015 (about 1 percent of 1990 ROI population).

Both ROI counties would experience population impacts under the Airport with Mixed Use Alternative. As with the Proposed Action, the greatest site-related impacts are projected for San Bernardino County (Table 4.2-2). In 2000, a population impact approaching 7,300 persons is projected; by 2015, nearly 21,400 persons are expected to migrate to San Bernardino County if this alternative is adopted. By comparison, population impacts in



**Table 4.2-2. Airport with Mixed Use Alternative: Total Regional Population Impacts - Counties and Selected Cities**

	2000	2005	2015
<b>San Bernardino County</b>	<b>7,267</b>	<b>14,672</b>	<b>21,386</b>
<b>ACS Total</b>	<b>5,313</b>	<b>10,763</b>	<b>15,709</b>
San Bernardino	2,720	5,510	8,042
Redlands	1,371	2,778	4,055
Highland	570	1,156	1,687
Loma Linda	395	800	1,168
Colton	257	519	757
Rest of County	1,954	3,908	5,676
<b>Riverside County</b>	<b>1,689</b>	<b>3,371</b>	<b>4,890</b>
<b>Total</b>	<b>8,956</b>	<b>18,043</b>	<b>26,276</b>

Note: Rest of the county includes both incorporated places and unincorporated areas throughout San Bernardino County.

Riverside County under this alternative are expected to be much less. In 2000, a population impact exceeding 1,600 persons is projected for Riverside County, increasing to nearly 4,900 persons by 2015.

Site-related population impacts to all five of the communities examined in this study are anticipated to be less over the long term under the Airport with Mixed Use Alternative than under any of the other alternatives except the Aircraft Maintenance Center Alternative (see Figure 4.2-1). The communities of San Bernardino and Redlands would experience the greatest absolute impacts on community population. By 2000, over 2,700 persons are projected to migrate to San Bernardino under this alternative; by 2015, the total in-migrants to this community are projected to exceed 8,000 (approximately 4.9 percent of the city's 1990 population). The city of Redlands is projected to add approximately 1,400 persons by 2000 and over 4,000 by 2015 (about 6.7 percent of Redlands' 1990 population). Population impacts to other communities are expected to be much lower. Although all jurisdictions examined in this study are projected to gain population under the Airport with Mixed Use Alternative, none of these expected increases will be great when compared to recent trends in population growth in San Bernardino and Riverside counties.

#### **4.2.3 Aircraft Maintenance Center Alternative**

The Aircraft Maintenance Center Alternative would create a short-term population impact in the ROI of about 8,600 persons by the year 2000 (Table 4.2-3). In-migration to the region as a consequence of this alternative would increase after 2000, reaching nearly 21,000 by 2015 (about 0.8 percent of 1990 ROI population).

**Table 4.2-3 Aircraft Maintenance Center Alternative: Total Regional Population Impacts - Counties and Selected Cities**

	2000	2005	2015
<b>San Bernardino County</b>	<b>6,945</b>	<b>13,200</b>	<b>17,049</b>
<b>ACS Total</b>	<b>5,066</b>	<b>9,669</b>	<b>12,511</b>
San Bernardino	2,594	4,950	6,405
Redlands	1,307	2,495	3,229
Highland	544	1,038	1,344
Loma Linda	376	719	930
Colton	245	467	603
Rest of County	1,879	3,530	4,537
<b>Riverside County</b>	<b>1,626</b>	<b>3,048</b>	<b>3,912</b>
<b>Total</b>	<b>8,571</b>	<b>16,248</b>	<b>20,961</b>

Note: Rest of county includes both incorporated places and unincorporated areas throughout San Bernardino County.

Both counties in the ROI are anticipated to experience in-migration under this reuse alternative. Population impacts would be the greatest in San Bernardino County, which is projected to receive nearly 7,000 site-related in-migrants by 2000 and more than 17,000 by 2015 (see Table 4.2-3). Population impacts on Riverside County would be much less, reaching over 1,600 in 2000, and increasing to more than 3,900 by 2015.

Site-related in-migration is anticipated in all five communities in the ACS under the Aircraft Maintenance Center Alternative. The greatest community-level population impacts are projected for the city of San Bernardino, which would reach nearly 2,600 persons by the year 2000 and about 6,400 by 2015 (about 3.9 percent of the city's 1990 population) (see Table 4.2-3). In-migration is anticipated to be much less in the other four communities considered.

The gains projected for both the ROI and ACS will not be large in either the relative or absolute sense because they will occur over two decades. Given the amount of population growth experienced in this portion of southern California over the past several decades, population impacts on the order projected should be accommodated by each jurisdiction examined.

#### **4.2.4 Non-Aviation Alternative**

The Non-Aviation Alternative would result in a short-term population impact in the ROI of about 7,500 persons in 2000 (Table 4.2-4). Subsequent impacts are expected to be more substantial, and by 2015 population impacts are projected to exceed 28,700 persons (about 1.1 percent of the 1990 ROI population).

**Table 4.2-4. Non-Aviation Alternative: Total Regional Population Impacts - Counties and Selected Cities**

	2000	2005	2015
San Bernardino County	6,102	11,820	23,463
ACS Total	4,450	8,675	17,305
San Bernardino	2,278	4,441	8,859
Redlands	1,148	2,239	4,469
Highland	478	932	1,858
Loma Linda	331	645	1,288
Colton	215	418	831
Rest of County	1,652	3,145	6,158
Riverside County	1,430	2,711	5,288
Total	7,532	14,531	28,751

Note: Rest of county includes both incorporated places and unincorporated areas throughout San Bernardino County.

The greatest county-level population impacts associated with the Non-Aviation Alternative are projected for San Bernardino County. In 2000, these impacts are projected at about 6,100 persons, increasing to nearly 23,500 by 2015 (Table 4.2-4). In-migration to Riverside County under this alternative would be less, reaching about 1,400 by 2000 and approximately 5,300 by 2015.

Under the Non-Aviation Alternative, the communities of San Bernardino and Redlands would experience the greatest population impacts (see Table 4.2-4). San Bernardino's site-related in-migrants would exceed 2,200 by 2000, approaching 8,900 by 2015 (about 5.4 percent of San Bernardino's 1990 population). Redlands, in turn, would add more than 1,100 persons by 2000 and almost 4,500 by 2015 (about 7.4 percent of the city's 1990 population).

The gains in population under the Non-Aviation Alternative, coupled with the sustained population growth that has occurred throughout the past several decades in the ROI (and is projected to continue into the foreseeable future), suggest that demographic impacts associated with this alternative should not lead to serious difficulties.

#### **4.2.5 No-Action Alternative**

Population impacts under the No-Action Alternative would be those described for closure in Section 3.4.2.

## 4.3 HOUSING

Changes in housing demand are projected to accompany site-related population impacts under the Proposed Action and each of the three reuse alternatives considered. The magnitude of impacts falls into the following descending order: the Proposed Action, Non-Aviation Alternative, Airport with Mixed Use Alternative, and Aircraft Maintenance Center Alternative. All reuse alternatives are projected to require more housing than required in 1987, the year preceding the base closure announcement. Housing impacts are examined at the regional, county, and ACS community levels.

### 4.3.1 Proposed Action

Under the Proposed Action more than 2,100 housing units would be required to accommodate site-related population impacts projected for the ROI in 2000 (Table 4.3-1). Site-related housing impacts are projected to increase continually over the following 15 years, with a demand for nearly 11,800 units by 2015.

**Table 4.3-1. Proposed Action: Total Regional Housing Impacts - Counties and Selected Cities (Number of Housing Units)**

	2000	2005	2015
San Bernardino County	1,730	5,322	9,633
ACS Total	1,270	3,918	7,124
San Bernardino	650	2,006	3,647
Redlands	328	1,012	1,840
Highland	136	421	765
Loma Linda	95	291	530
Colton	61	188	342
Rest of County	460	1,404	2,509
Riverside County	397	1,208	2,150
Total	2,127	6,530	11,783

Note: Rest of county includes both incorporated places and unincorporated areas throughout San Bernardino County.

For the two counties considered in this analysis, most (more than 75 percent) of the site-related increase in housing demand under the Proposed Action is projected for San Bernardino County. Totalling slightly more than 1,700 units in 2000, the increased housing demand in this county is expected to exceed 9,600 housing units by 2015 (see Table 4.3-1). Housing impacts associated with this alternative are smaller in Riverside County, less than 400 units in 2000, increasing to more than 2,100 units by 2015.

Of the individual communities examined in this study, the city of San Bernardino is anticipated to require the greatest amount of additional housing to accommodate population increases associated with the Proposed Action. More than 600 additional housing units would be required in 2000; by 2015, more than 3,600 additional housing units would be required in San Bernardino to accommodate site-related population impacts (see Table 4.3-1). Ranked second in magnitude, housing impacts in Redlands would exceed 300 units in 2000, growing to more than 1,800 by 2015. This would represent an average annual requirement of less than 100 units per year, well within the limitations imposed by the local growth control measures of 400 units per year (City of Redlands, 1986). Housing impacts in the remaining three communities considered would be much less than in these two places.

As discussed in Chapter 3, the rapid population growth found in this portion of southern California over the past decade has given rise to a very active housing construction industry. Apart from any possible reuse plans for Norton AFB, population projections for the area indicate that housing demand will increase in the ROI and that housing construction will continue at a rapid pace. The local housing construction industry should be able to absorb site-related housing demands under the Proposed Action. If the type of housing desired differs qualitatively from supply (e.g., size, number of bedrooms, etc.), the local construction industry could be expected to meet any new change in consumer housing preference.

#### **4.3.2 Airport with Mixed Use Alternative**

Future housing demand in the ROI is anticipated to exceed 3,000 units by 2000, as a result of implementing the Airport with Mixed Use Alternative (Table 4.3-2). By 2015, regional site-related housing demand is projected at more than 9,000 units.

Most of the increased demand for housing in the ROI under this alternative is anticipated to occur in San Bernardino County. County demand is projected at about 2,400 additional units by 2000; demand is expected to increase steadily to nearly 7,400 housing units by 2015 (Table 4.3-2). Site-related housing impacts in Riverside County are projected at nearly 600 units in 2000, increasing to almost 1,700 units by 2015.

At the community level, the greatest housing impacts under the Airport with Mixed Use Alternative are projected for the city of San Bernardino. By 2000, these impacts are expected to exceed 900 housing units, growing to nearly 2,800 units by 2015 (Table 4.3-2). Housing demand associated with this alternative is expected to be much less in Redlands: a demand for nearly 500 units is projected in 2000, growing to almost 1,400 units by 2015. Housing demand in the remaining three ACS communities would be much less.

**Table 4.3-2. Airport with Mixed Use Alternative: Total Regional Housing Impacts - Counties and Selected Cities (Number of Housing Units)**

	2000	2005	2015
<b>San Bernardino County</b>	<b>2,437</b>	<b>5,042</b>	<b>7,349</b>
<b>ACS Total</b>	<b>1,783</b>	<b>3,698</b>	<b>5,398</b>
San Bernardino	913	1,893	2,764
Redlands	460	955	1,393
Highland	191	397	580
Loma Linda	133	275	401
Colton	88	178	260
Rest of County	654	1,343	1,951
<b>Riverside County</b>	<b>565</b>	<b>1,158</b>	<b>1,680</b>
<b>Total</b>	<b>3,002</b>	<b>6,200</b>	<b>9,029</b>

**Note:** Rest of county includes both incorporated places and unincorporated areas throughout San Bernardino County.

Housing units will be required at all levels of geographic focus (ROI, county, and community) to accommodate in-migrants projected under the Airport with Mixed Use Alternative. However, the sustained growth in population and housing (and housing demand) in this portion of southern California, experienced over the past several decades and projected to continue over the coming decades, should easily accommodate the growth in site-related housing demands projected under this reuse alternative.

#### **4.3.3 Aircraft Maintenance Center Alternative**

Almost 2,900 additional housing units would be required by 2000 to accommodate site-related increases in ROI population under the Aircraft Maintenance Center Alternative (Table 4.3-3). The demand in housing due to this alternative is projected to increase even further during the early 21st century, exceeding 7,200 units by 2015.

The greatest county-level housing demands under the Aircraft Maintenance Center Alternative are anticipated to occur in San Bernardino County. In 2000, these impacts are projected to exceed 2,300 housing units; by 2015, more than 5,800 housing units would be required by people in-migrating to San Bernardino County under this reuse alternative (Table 4.3-3). By comparison, site-related housing demand would be less in Riverside County; approximately 500 in the year 2000, growing to more than 1,300 by 2015.

Almost 900 housing units would be required in the city of San Bernardino in 2000 by site-related in-migrants under the Aircraft Maintenance Center Alternative (Table 4.3-3). Housing demand is anticipated to reach 2,200 total units in San Bernardino by 2015. Site-related housing impacts in

**Table 4.3-3. Aircraft Maintenance Center Alternative: Total Regional Housing Impacts - Counties and Selected Cities  
(Number of Housing Units)**

	2000	2005	2015
<b>San Bernardino County</b>	<b>2,326</b>	<b>4,536</b>	<b>5,838</b>
<b>ACS Total</b>	<b>1,698</b>	<b>3,322</b>	<b>4,300</b>
San Bernardino	870	1,701	2,201
Redlands	438	857	1,110
Highland	182	357	462
Loma Linda	126	247	320
Colton	82	160	207
Rest of County	628	1,214	1,538
<b>Riverside County</b>	<b>543</b>	<b>1,047</b>	<b>1,344</b>
<b>Total</b>	<b>2,869</b>	<b>5,583</b>	<b>7,203</b>

**Note:** Rest of county includes both incorporated places and unincorporated areas throughout San Bernardino County.

Redlands are projected to rank second to San Bernardino with a demand for more than 400 units in 2000, growing to about 1,100 units by 2015.

Housing impacts in the remaining three communities examined in this study would be much less than those anticipated in either San Bernardino or Redlands.

As with the previous two reuse alternatives considered in this study, housing would be required by site-related in-migrants at the regional, county, and community levels under the Aircraft Maintenance Center Alternative. However, given the productivity of the housing construction industry in the ROI over the past decade and the traditionally moderate vacancy rates in much of the area, these demands would be absorbed with little difficulty.

#### **4.3.4 Non-Aviation Alternative**

Under the Non-Aviation Alternative, about 2,500 additional housing units would be required in the ROI in 2000 to accommodate site-related increases in population (Table 4.3-4). By 2015, housing demand in the ROI is anticipated to approach 9,900 units.

Housing impacts in San Bernardino County as a result of the Non-Aviation Alternative are anticipated to exceed those in Riverside County. Impacts in 2000 are projected at more than 2,000 housing units (Table 4.3-4). By 2015, site-related housing demands in San Bernardino County are projected to approach 8,100 units. Housing impacts in Riverside County are expected to exceed 1,800 housing units by 2015.

**Table 4.3-4. Non-Aviation Alternative: Total Regional Housing Impacts - Counties and Selected Cities (Number of Housing Units)**

	2000	2005	2015
<b>San Bernardino County</b>	<b>2,037</b>	<b>4,062</b>	<b>8,063</b>
<b>ACS Total</b>	<b>1,488</b>	<b>2,981</b>	<b>5,947</b>
San Bernardino	761	1,526	3,044
Redlands	384	769	1,536
Highland	160	320	638
Loma Linda	111	222	443
Colton	72	144	286
Rest of County	549	1,081	2,116
<b>Riverside County</b>	<b>476</b>	<b>932</b>	<b>1,817</b>
<b>Total</b>	<b>2,513</b>	<b>4,994</b>	<b>9,880</b>

**Note:** Rest of county includes both incorporated places and unincorporated areas throughout San Bernardino County.

Nearly 800 housing units would be required in the city of San Bernardino in 2000 to accommodate projected population growth associated with the Non-Aviation Alternative (see Table 4.3-4). By 2015, project-related housing demand in this community would exceed 3,000 units. Housing demand in Redlands is projected to rank second to that in San Bernardino, reaching nearly 400 units in 2000, and more than 1,500 units by 2015. Housing impacts in the other three ACS communities would be considerably lower than either San Bernardino or Redlands.

In the long term, housing impacts associated with the Non-Aviation Alternative would fall between those resulting from the Proposed Action and the Airport with Mixed Use Alternative. Although increased site-related demands are projected for the ROI and the ACS, these increases are anticipated to be relatively gradual. The pace of these increases, coupled with a vibrant regional housing industry should enable the absorption of site-related housing demands with minimal difficulty.

#### **4.3.5 No-Action Alternative**

Housing impacts under the No-Action Alternative would be those described for closure in Section 3.4.3.

### **4.4 PUBLIC SERVICES**

Impacts to key local public services are determined by the change in demand for personnel and facilities arising from project implementation. The ability to accommodate increased demand or to respond to decreases in demand while maintaining accustomed levels of local public service is examined based on potential changes in demand for services.



Impacts to public services in the immediate vicinity of the site may be exacerbated by current or future ROI residents choosing to reside at the site instead of elsewhere in the region. The settlement pattern could have impacts on local government, public education, police and fire protection, and health care services. These impacts, however, are assumed to be part of the region's baseline growth; therefore, they are considered as a redistribution of existing and future growth within the ROI. Moreover, the development and staffing of necessary public service facilities were included as direct impacts in each alternative conceptual use plan.

#### **4.4.1 Local Government**

Potential impacts to local government structure and employment are examined for the Proposed Action and each alternative. The analysis considers population and subsequent per-capita demand changes based on in-migration projections and current service levels, and changes in service area and infrastructure responsibility resulting under each alternative for each primarily affected community near the base.

Currently the relatively new city of Highland has a low service level largely attributable to the city contracting its services to other entities. When the city provides the bulk of its own services, its level of service likely would improve and required employment likely would increase. In the analysis for local government impacts, the future level of municipal service for the city of Highland has been projected to be 7.7 employees per 1,000 people (the average service level for surrounding municipalities) to reflect the anticipated expansion of community services.

**4.4.1.1 Proposed Action.** Impacts to local government employment arising from implementation of the Proposed Action are presented in Table 4.4-1. Under the Proposed Action, San Bernardino County would experience the greatest increase in government service demand of any jurisdiction in the region based on per-capita calculations. Using current staffing of 7.8 county employees per 1,000 people, employment by the county related to operations at the project site would be 39 employees in 2000 and 219 in 2015 in order to maintain current service levels.

The city of San Bernardino would experience the next greatest employment increase with 15 personnel by 2000 and 84 personnel by 2015 to maintain the current level of municipal service of 7.9 employees per 1,000 people. The cities of Redlands, Loma Linda, and Colton would need to increase their municipal staff levels. By 2005, 22 additional employees would be required in Redlands, 4 in Loma Linda, and 6 in Colton. Over the long term (by 2015), 40 additional employees would be needed in Redlands, 8 in Loma Linda, and 10 in Colton. Municipal staffing in Highland would need to increase by 17 employees in the long term based on projected service level increases.

**Table 4.4-1. Proposed Action: Total Government  
Employment Impacts**

	2000	2005	2015
San Bernardino County	39	121	219
San Bernardino	15	46	84
Redlands	7	22	40
Highland	3	9	17
Loma Linda	1	4	8
Colton	2	6	10
Total	67	208	378

Note: Excludes area-generated employee demands for San Bernardino.

The project site is located within the city limits of San Bernardino; therefore, administration of the area would become the responsibility of the city during reuse. Duties such as public safety, public works, utilities, building code inspection and enforcement, and recreation services would need to be extended by the city to serve the additional area and infrastructure requirements. In addition to the calculated per-capita increases presented above, further increases in city employment and facilities infrastructure (in addition to and complementing the existing base infrastructure) may be required to serve this fixed area regardless of changes in site-related population. Based on current service area per government employee levels for the city (28 acres per employee), an additional 74 employees also may be required to serve the additional 2,097 acres comprising the base for which the city would be responsible to provide municipal administration.

**4.4.1.2 Airport with Mixed Use Alternative.** Impacts to local government employment arising from implementation of the Airport with Mixed Use Alternative are presented in Table 4.4-2. Under development of this alternative at the project site, staffing in San Bernardino County would need to increase by 55 employees by 2000 and 167 employees by 2015 to meet projected increased demand and to maintain current per-capita levels of service. Similarly, municipal employment in the city of San Bernardino would need to increase by 21 employees by 2000 and 64 employees by 2015; the city of Redlands would need an additional 10 personnel in 2000 and 30 in 2015. Based on a projected increase in service levels for Highland, this city would need an additional 13 employees over the long term. The cities of Loma Linda and Colton would each need less than 10 additional employees over both the short and long term to meet project-related demand.

As with the Proposed Action, since the base is located within the city limits of San Bernardino, administration of the base area would become the responsibility of the city. Municipal duties would need to be extended by the city to serve the additional area and infrastructure requirements. In

**Table 4.4-2. Airport with Mixed Use Alternative: Total Government Employment Impacts**

	2000	2005	2015
San Bernardino County	55	114	167
San Bernardino	21	44	64
Redlands	10	21	30
Highland	4	9	13
Loma Linda	2	4	6
Colton	3	5	8
Total	93	197	288

Note: Excludes area-generated employee demands for San Bernardino.

addition to the calculated per-capita increases presented above, further increases in city employment and facilities infrastructure may be required in addition to and complementing the existing base infrastructure. Based on current service area per government employee levels for the city (28 acres per employee), an additional 74 employees also may be required to serve the additional 2,097 acres comprising the base for which the city would be responsible to provide municipal administration.

**4.4.1.3 Aircraft Maintenance Center Alternative.** Impacts to local government employment arising from implementation of the Aircraft Maintenance Center Alternative are presented in Table 4.4-3. Staffing in San Bernardino County under this alternative would need to increase by 53 employees by 2000 and 133 employees by 2015 to meet projected increased demand and to maintain current per-capita levels of service. Municipal employment in the city of San Bernardino would need to increase by 20 employees by 2000 and 51 employees by 2015; the city of Redlands would need an additional 10 personnel in 2000 and 24 in 2015. Based on a projected increase in service level for Highland, the city would need an additional ten employees over the long term. The cities of Colton and Loma Linda would need less than seven additional employees each over both the short and long term to meet project-related demand.

As under the Proposed Action, since the base is located within the city limits of San Bernardino, administration of the base area would become the responsibility of the city. Municipal duties would need to be extended by the city to serve the additional area and infrastructure requirements. In addition to the calculated per-capita increases presented above, further increases in city employment and facilities infrastructure may be required in addition to and complementing the existing base infrastructure. Based on current service area per government employee levels for the city (28 acres per employee), an additional 74 employees also may be required to serve the additional 2,097 acres comprising the base for which the city would be responsible to provide municipal administration.

**Table 4.4-3. Aircraft Maintenance Center Alternative: Total Government Employment Impacts**

	2000	2005	2015
San Bernardino County	53	103	133
San Bernardino	20	39	51
Redlands	10	19	24
Highland	4	8	10
Loma Linda	2	4	5
Colton	2	5	6
<b>Total</b>	<b>91</b>	<b>178</b>	<b>229</b>

**Note:** Excludes area-generated employee demands for San Bernardino.

**4.4.1.4 Non-Aviation Alternative.** Impacts to local government employment arising from implementation of the Non-Aviation Alternative are presented in Table 4.4-4. San Bernardino County would experience the greatest increase in public service demand arising from implementation of the Non-Aviation Alternative based on per-capita calculations. Employment by the county related to operations at the project site would need to increase by 46 personnel by 2000 and 183 personnel by 2015 in order to maintain accustomed levels of public service. The city of San Bernardino would experience the second greatest employment growth with 17 personnel by 2000 and 70 personnel by 2015 to maintain the current level of municipal service.

**Table 4.4-4. Non-Aviation Alternative: Total Government Employment Impacts**

	2000	2005	2015
San Bernardino County	46	92	183
San Bernardino	17	35	70
Redlands	8	17	34
Highland	4	7	14
Loma Linda	2	3	7
Colton	2	4	9
<b>Total</b>	<b>79</b>	<b>158</b>	<b>317</b>

**Note:** Excludes area-generated employee demands for San Bernardino.

As under the other alternatives, administration of the base area would become the responsibility of the city of San Bernardino. Municipal duties would need to be extended by the city to serve the additional area and infrastructure requirements. In addition to the calculated per-capita increases presented above, further increases in county employment and facilities infrastructure may be required in addition to and complementing

the existing base infrastructure. Based on current service area per government employee levels for the city (28 acres per employee), an additional 74 employees also may be required to serve the additional 2,097 acres comprising the base for which the city would be responsible to provide municipal administration.

**4.4.1.5 No-Action Alternative.** Local government impacts for the No-Action Alternative would be those described for closure in Section 3.4.4.1.

#### **4.4.2 Public Education**

Potential impacts to public education services and facilities are examined for each alternative. The analysis considers project-related population change and its effect on local enrollments and teaching staff strengths.

Based on enrollment impact projections, short-term enrollment in the San Bernardino City USD would be reduced by as many as 1,375 students (or 3.3 percent of total enrollment) due to base closure. The district, however, has been experiencing 3.7 percent annual enrollment growth through the 1980s and currently is operating beyond its enrollment capacity. This growth is generated from non-site-related activity within the school district. Temporary enrollment reductions and declining demand for teachers that would occur from base closure would quickly be offset by non-site-related enrollment growth anticipated by the district, and the development of the Proposed Action or any of the reuse alternatives.

Similarly at Redlands USD, short-term enrollment would be reduced by as many as 1,135 students (or 7.1 percent of total enrollment) from the number of students related to preclosure base operations. This district, too, has been experiencing rapid annual enrollment growth for the past 10 years (4.7 percent) due to non-site-related activity and also is operating beyond capacity. Enrollment reductions and decreased demand for teachers that would accompany base closure would be offset by continued non-Norton AFB-related enrollment growth anticipated by the district, and the development of the Proposed Action or any of the reuse alternatives.

**4.4.2.1 Proposed Action.** Potential impacts to public school enrollments and teaching strength arising from implementation of the Proposed Action are presented in Tables 4.4-5 and 4.4-6. Total regional public school enrollments related to operations at the Norton AFB site would be approximately 1,300 students by 2000 and more than 7,000 students by 2015. The greatest effects to public school enrollments are estimated for San Bernardino City USD and Redlands USD.

Projected levels of public school enrollments under the Proposed Action over both the short and long term would be greater than those levels arising

**Table 4.4-5. Proposed Action: Total Enrollment Impacts**

	2000	2005	2015
San Bernardino City USD	480	1,480	2,690
Redlands USD	257	792	1,442
Rest of San Bernardino County	301	918	1,643
Riverside County	238	724	1,289
Total	1,276	3,914	7,064

**Table 4.4-6. Proposed Action: Total Teaching Staff Impacts**

	2000	2005	2015
San Bernardino City USD	20	60	110
Redlands USD	10	32	57
Rest of San Bernardino County	12	37	68
Riverside County	10	30	53
Total	52	159	288

under the other project alternatives. Enrollments in San Bernardino City USD attributable to the Proposed Action at the project site are projected to be 480 students in 2000 and 2,690 students in 2015. Enrollment projections for Redlands USD are 257 students in 2000 and 1,442 in 2015. This is a larger than historic attendance related to Norton AFB. Moreover, in absence of regular military rotation, a more stable enrollment progression is expected.

Corresponding changes in teaching strength and facility use likely would accompany these projected enrollment changes. Enrollments related to the Proposed Action through 2015 would result in demand for 20 additional teachers in 2000 and 110 in 2015 in San Bernardino City USD; and 10 additional teachers in 2000 and 57 in 2015 in Redlands USD.

Long-term enrollment increases would exacerbate crowded conditions at San Bernardino City USD and Redlands USD, and would require additional classrooms or new schools to be constructed in order to accommodate these projected enrollment increases.

**4.4.2.2 Airport with Mixed Use Alternative.** Potential impacts to public school enrollments and teaching strength arising from implementation of the Airport with Mixed Use Alternative are presented in Tables 4.4-7 and 4.4-8. Impacts to public education under this alternative are estimated to be less than those arising under the Proposed Action: regional public school enrollments related to this alternative would increase from almost 1,800 students in 2000 to more than 5,400 students in 2015.

**Table 4.4-7. Airport with Mixed Use Alternative: Total Enrollment Impacts**

	2000	2005	2015
San Bernardino City USD	674	1,397	2,039
Redlands USD	361	748	1,092
Rest of San Bernardino County	427	878	1,275
Riverside County	338	694	1,007
Total	1,799	3,717	5,413

**Table 4.4-8. Airport with Mixed Use Alternative: Total Teaching Staff Impacts**

	2000	2005	2015
San Bernardino City USD	27	57	83
Redlands USD	14	30	43
Rest of San Bernardino County	18	36	52
Riverside County	14	29	42
Total	73	152	220

Enrollments attributable to development of this alternative would be 674 students in 2000 and 2,039 students in 2015 in San Bernardino City USD; and 361 students in 2000 and 1,092 in 2015 in Redlands USD. Changes in demand for teachers and facility use that would accompany these projected enrollments would result in 27 additional teachers in 2000 and 83 in 2015 in San Bernardino City USD; and 14 additional teachers in 2000 and 43 in 2015 in Redlands USD.

Long-term enrollment increases likely would require additional classrooms or new schools being constructed in order to accommodate these projected enrollment increases and reduce adverse impacts to already crowded conditions at San Bernardino City USD and Redlands USD.

**4.4.2.3 Aircraft Maintenance Center Alternative.** Potential impacts to public school enrollments and teaching strength arising from implementation of the Aircraft Maintenance Center Alternative are presented in Tables 4.4-9 and 4.4-10. Impacts to public education under this alternative are estimated to be less than those arising under the Proposed Action: regional public school enrollments related to operations at the site would increase from about 1,700 students in 2000 to more than 4,300 students in 2015.

Enrollments attributable to development of this alternative would be 642 students in 2000 and 1,624 students in 2015 in San Bernardino City USD;

**Table 4.4-9. Aircraft Maintenance Center Alternative: Total Enrollment Impacts**

	2000	2005	2015
San Bernardino USD	642	1,255	1,624
Redlands USD	343	672	869
Rest of San Bernardino County	409	792	1,019
Riverside County	325	628	806
Total	1,720	3,347	4,318

**Table 4.4-10. Aircraft Maintenance Center Alternative: Total Teaching Staff Impacts**

	2000	2005	2015
San Bernardino City USD	26	51	66
Redlands USD	14	27	35
Rest of San Bernardino County	17	33	42
Riverside County	13	26	33
Total	70	137	176

and 343 students in 2000 and 869 in 2015 in Redlands USD. Changes in demand for teachers and facility use that would accompany these projected enrollments would result in demand for 26 additional teachers in 2000 and 66 in 2015 in San Bernardino City USD; and 14 additional teachers in 2000 and 35 in 2015 in Redlands USD.

Long-term enrollment increases likely would require additional classrooms or new schools being constructed in order to accommodate these projected enrollment increases and reduce adverse impacts to already crowded conditions at San Bernardino City USD and Redlands USD.

**4.4.2.4 Non-Aviation Alternative.** Tables 4.4-11 and 4.4-12 present the potential impacts to public school enrollments and teaching strength arising from implementation of the Non-Aviation Alternative. Under this alternative, total regional public school enrollments related to operations at the project site would be about 1,500 students in 2000, increasing to more than 5,900 students by 2015. Projected levels of public school enrollments under this alternative would exceed historical levels attributable to Norton AFB operations.

Enrollments attributable to development of the Non-Aviation Alternative at the project site would be 562 students in 2000 and 2,246 in 2015 in San Bernardino City USD; and 300 students in 2000 and 1,203 in 2015 in



**Table 4.4-11. Non-Aviation Alternative: Total Enrollment Impacts**

	2000	2005	2015
San Bernardino City USD	562	1,126	2,246
Redlands USD	300	603	1,203
Rest of San Bernardino County	359	706	1,384
Riverside County	285	558	1,089
Total	1,506	2,993	5,922

**Table 4.4-12. Non-Aviation Alternative: Total Teaching Staff Impacts**

	2000	2005	2015
San Bernardino City USD	23	46	92
Redlands USD	12	24	48
Rest of San Bernardino County	15	29	57
Riverside County	12	23	45
Total	62	122	242

Redlands USD. Changes in demand for teachers and facility use that would accompany these projected enrollment changes would result in 23 additional teachers in 2000 and 92 in 2015 in San Bernardino City USD; and 12 additional teachers in 2000 and 48 in 2015 in Redlands USD. This is a larger than historic attendance related to Norton AFB. Moreover in absence of a regular military rotation, a more stable enrollment progression is expected.

Long-term enrollment increases likely would require additional classrooms or new schools being constructed in order to accommodate these projected enrollment increases and reduce adverse impacts to already crowded conditions at San Bernardino City USD and Redlands USD.

**4.4.2.5 No-Action Alternative.** Public education impacts for the No-Action Alternative would be those described for closure in Section 3.4.4.2.

#### **4.4.3 Police Protection**

Potential impacts to police protection services are examined for each alternative. The analysis considers project-related population changes and changes in service area and infrastructure resulting under each alternative. The analysis also examines each municipal police department in the area surrounding Norton AFB. The Highland and Loma Linda police departments, which contract services from the San Bernardino County Sheriff's Department, operate as independent municipal agencies and therefore are

considered as such. Under the Proposed Action and other alternatives, the number of sworn officers required by the Highland, Loma Linda, and Colton police departments due to reuse activity at the project site would be less than two. Increased demand not related to activity at the Norton AFB site that is projected for the region would offset any reduction in demand experienced by these departments arising from base closure.

**4.4.3.1 Proposed Action.** Table 4.4-13 presents projected impacts to police protection in the ACS under the Proposed Action. The City of San Bernardino Police Department would experience the greatest demand for staffing under the Proposed Action. Projected service area population increases would require staffing levels associated with development of the Proposed Action at the project site to increase by 3 sworn officers in 2000 and by 17 sworn officers in 2015, to retain existing public service levels of 1.6 sworn officers per 1,000 people.

**Table 4.4-13. Proposed Action: Total Police Protection Impacts  
(Number of Additional Sworn Officers)**

	2000	2005	2015
San Bernardino	3	9	17
Redlands	1	3	6
Highland	0	1	1
Loma Linda	0	1	1
Colton	0	1	1
Total	4	15	26

Note: Excludes area-generated employee demands for San Bernardino.

The sworn officer staff at the Redlands Police Department would need to be increased by 1 officer in 2000 and by 6 officers in 2015 to maintain the current service level of 1.1 sworn officers per 1,000 people and meet increased demand associated with development of the Proposed Action.

Since most of the base (2,097 of 2,127 acres) is located within the city of San Bernardino, the San Bernardino Police Department likely would assume the responsibility of law enforcement services (including police patrolling, responding to emergencies, and detaining suspects) at the site. With this increased area of responsibility, further increased officer staffing by the department may be required independent of those addressing per-capita demand since these officers would be required to serve this fixed area regardless of changes in site-related population. Based on the current service area per sworn officer level for the city (136 acres of responsibility per sworn officer), an additional 15 sworn officers also may be required to serve the 2,097 acres comprising the base for which the city would become responsible. Local police agencies would no longer be able to rely on the security police squadron formerly active at the base.

The remaining 30 acres of base property is located in the city of Highland. Based on the current service area per sworn officer for the city, less than one full-time position would be required to serve this additional area.

**4.4.3.2 Airport with Mixed Use Alternative.** Projected impacts to police protection in the ACS under this alternative are presented in Table 4.4-14. Under this alternative, the San Bernardino Police Department again would experience the greatest per-capita demand for sworn officer staffing. Projected population increases would require staffing levels associated with development at the Norton AFB site to increase by 13 sworn officers in 2015, to maintain existing service levels of police protection. Sworn officer staffing at the Redlands Police Department would need to be increased by four officers in 2015 to maintain current service levels and meet increased demand associated with this alternative.

**Table 4.4-14. Airport with Mixed Use Alternative: Total Police Protection Impacts (Number of Additional Sworn Officers)**

	2000	2005	2015
San Bernardino	4	9	13
Redlands	1	3	4
Highland	0	1	1
Loma Linda	0	1	1
Colton	0	1	1
Total	5	15	20

Note: Excludes area-generated employee demands for San Bernardino.

Because most of the project site is located within the city of San Bernardino, the San Bernardino Police Department likely would assume the responsibility of law enforcement services at the main base site. With this increased area of responsibility, further increased officer staffing by the department independent of per-capita staffing requirements may be required. Based on the current service area per sworn officer for the city (136 acres of responsibility per sworn officers), an additional 15 sworn officers also may be required to serve the 2,097 acres comprising the main base for which the city would become responsible. Local police agencies would no longer be able to rely on the security police squadron formerly active at the base.

The remaining 30 acres of base property in the city of Highland would not require any additional sworn officers in that police department, based on the current service area per sworn officer.

**4.4.3.3 Aircraft Maintenance Center Alternative.** Projected impacts to police protection in the ACS under this alternative are presented in Table 4.4-15. The San Bernardino Police Department again would experience the

**Table 4.4-15. Aircraft Maintenance Center Alternative: Total Police Protection Impacts (Number of Additional Sworn Officers)**

	2000	2005	2015
San Bernardino	4	8	10
Redlands	1	3	4
Highland	0	1	1
Loma Linda	0	1	1
Colton	0	1	1
Total	5	14	17

**Note:** Excludes area-generated employee demands for San Bernardino.

greatest per-capita demand for sworn officer staffing under this alternative. Projected population increases would require staffing levels associated with development at the Norton AFB site to increase by ten sworn officers in 2015 to maintain existing service levels of police protection. Sworn officer staffing at the Redlands Police Department would need to be increased by four officers in 2015 to maintain current service levels and meet increased demand associated with this alternative. Potential reductions in police personnel are unlikely since population in these cities is growing rapidly. Therefore, natural population growth and non-site-related in-migration along with project-related growth would maintain or expand existing levels of demand for police protection services.

Because most of the project site is located within the city of San Bernardino, the San Bernardino Police Department likely would assume the responsibility of law enforcement services at the main base site. With this increased area of responsibility, further increased officer staffing by the department may be required. Based on the current service area per sworn officer for the city (136 acres of responsibility per sworn officers), an additional 15 sworn officers also may be required to serve the 2,097 acres comprising the main base for which the city would become responsible. Local police agencies would no longer be able to rely on the security police squadron formerly active at the base.

Approximately 30 acres of base property is located in the city of Highland. Based on the current service area per sworn officer, less than one full-time position would be required to serve this additional area.

**4.4.3.4 Non-Aviation Alternative.** Projected impacts to police protection in the ACS are presented in Table 4.4-16 for the Non-Aviation Alternative. Potential impacts resulting from changes in demand for police protection services under this alternative are slightly less than those under the Proposed Action.

**Table 4.4-16. Non-Aviation Alternative: Total Police Protection Impacts  
(Number of Additional Sworn Officers)**

	2000	2005	2015
San Bernardino	4	7	14
Redlands	1	2	5
Highland	0	0	1
Loma Linda	0	0	1
Colton	0	1	1
Total	5	10	22

**Note:** Excludes area-generated employee demands for San Bernardino.

Under this alternative, the San Bernardino Police Department would experience the greatest per-capita changes in staffing as a result of changes in activity at the base. Staffing levels associated with activity at the project site would need to increase by 14 officers in 2015 to maintain the station's current service level. The sworn officer staff at the Redlands Police Department would need to be increased by five officers in 2015 to maintain current service levels and meet increased demand associated with development of this alternative.

As presented above, because the project site is located within the city of San Bernardino, the San Bernardino Police Department would assume the responsibility of law enforcement services at the site. Based on the current service area per sworn officer for the city (136 acres of responsibility per sworn officers), an additional 15 sworn officers also may be required to serve the 2,097 acres comprising the main base for which the city would become responsible. Local police agencies would no longer be able to rely on the security police squadron formerly active at the base.

Approximately 30 acres of base property is located in the city of Highland. Based on the current service area per sworn officer, less than one full-time position would be required to serve this additional area.

**4.4.3.5 No-Action Alternative.** Police protection impacts for the No-Action Alternative would be those described for closure in Section 3.4.4.3.

#### **4.4.4 Fire Protection**

Potential impacts to fire protection services are examined for each alternative. The analysis first considers project-related population changes and then changes in service area and infrastructure responsibility resulting under each alternative. Under the Proposed Action and other alternatives, the number of fire fighters required by the Colton and Loma Linda fire departments due to reuse activity at the project site would be less than two. Increased demand not related to activity at the project site that is projected

for the region would offset any reduction in demand experienced by these departments arising from base closure.

Potential impacts to response times and fire insurance ratings are a function of in-migrant settlement patterns at a sub-community level. Such settlement information of this detail is uncertain and, therefore, impacts to fire ratings cannot be predicted.

**4.4.4.1 Proposed Action.** Table 4.4-17 presents projected impacts to fire protection in the ACS under the Proposed Action. On a per-capita basis, the City of San Bernardino Fire Department would experience the greatest demand for fire protection staffing under the Proposed Action. An additional 13 professional fire fighters in 2015 would be required to serve the additional population under the Proposed Action and to retain existing service levels. The fire fighting staff at the Redlands Fire Department would need to be increased by five fire fighters in 2015 to maintain the current service level and meet increased demand associated with development of the Proposed Action.

**Table 4.4-17. Proposed Action: Total Fire Protection Impacts  
(Number of Additional Fire Fighters)**

	2000	2005	2015
San Bernardino	2	7	13
Redlands	1	3	5
Highland	0	1	2
Loma Linda	0	1	1
Colton	0	1	1
Total	3	13	22

**Note:** Excludes area-generated employment demands for San Bernardino.

As Norton AFB property is conveyed under this alternative, responsibility for fire protection services at the main base site would revert to the San Bernardino Fire Department. In order to serve this increased infrastructure and land area consisting of 2,097 acres, the San Bernardino Fire Department would need an additional 11 fire fighters to keep the current level of service.

Approximately 30 acres of base property is located in the city of Highland. Based on the current service area per fire fighter for the city, one additional full-time fire fighter would be required to serve the additional area.

Local fire districts and communities no longer would be able to rely on the Norton AFB Fire Department which has specialized equipment and training for aviation and hazardous materials emergencies, to assist in fire protection, fire suppression, or hazardous materials emergency efforts.

**4.4.4.2 Airport with Mixed Use Alternative.** Potential impacts to fire protection in the ACS arising under this alternative are presented in Table 4.4-18. The City of San Bernardino Fire Department would experience the greatest per-capita demand for fire protection staffing under this alternative. An additional ten professional fire fighters in 2015 would be required to serve the additional population under the Airport with Mixed Use Alternative and to retain existing service levels. Redlands Fire Department would need to add four fire fighters in 2015 to maintain the current service level due to changes in population.

**Table 4.4-18. Airport with Mixed Use Alternative: Total Fire Protection Impacts (Number of Additional Fire Fighters)**

	2000	2005	2015
San Bernardino	3	7	10
Redlands	1	3	4
Highland	1	1	2
Loma Linda	0	1	1
Colton	0	1	1
Total	5	13	18

Note: Excludes area-generated employee demands for San Bernardino.

Because responsibility for fire protection services at the main base site would revert to the San Bernardino Fire Department, the district would need an additional 11 fire fighters to serve the 2,097 acres of increased service area.

The 30 acres of base property in the city of Highland would require one additional full-time fire fighter in that fire department, based on the current service area per fire fighter.

Local fire districts and communities no longer would be able to rely on the Norton AFB Fire Department, which has specialized equipment and training for aviation and hazardous materials emergencies, to assist in fire protection, fire suppression, or hazardous materials emergency efforts.

**4.4.4.3 Aircraft Maintenance Center Alternative.** Potential impacts to fire protection in the ACS arising under this alternative are presented in Table 4.4-19. Under this alternative, the City of San Bernardino Fire Department would experience the greatest per-capita demand for fire protection staffing. Demand related to projected service area population increases would require an additional eight professional fire fighters in 2015 to retain existing service levels. The Redlands Fire Department would need to add three fire fighters in 2015 to maintain the current service level and meet increased demand.

**Table 4.4-19. Aircraft Maintenance Center Alternative: Total Fire Protection Impacts (Number of Additional Fire Fighters)**

	2000	2005	2015
San Bernardino	3	6	8
Redlands	1	2	3
Highland	1	1	1
Loma Linda	0	1	1
Colton	0	1	1
<b>Total</b>	<b>5</b>	<b>11</b>	<b>14</b>

Note: Excludes area-generated employee demands for San Bernardino.

Because responsibility for fire protection services at the main base site would revert to the San Bernardino Fire Department, the district would need an additional 11 fire fighters to serve the 2,097 acres of increased service area.

The 30 acres of base property in the city of Highland would require one additional fire fighters in that fire department, based on the current service area per fire fighter.

Local fire districts and communities no longer would be able to rely on the Norton AFB Fire Department, which has specialized equipment and training for aviation and hazardous materials emergencies, to assist in fire protection, fire suppression, or hazardous materials emergency efforts.

**4.4.4.4 Non-Aviation Alternative.** Impacts to fire protection in the ACS estimated for the Non-Aviation Alternative are presented in Table 4.4-20. The greatest per-capita demand for fire protection staffing under this alternative would be at the San Bernardino Fire Department. An additional 11 professional fire fighters in 2015 would be required under the Non-Aviation Alternative to retain existing service levels. The Redlands Fire Department would need to add four fire fighters in 2015 to maintain the current service level and meet increased demand.

**Table 4.4-20. Non-Aviation Alternative: Total Fire Protection Impacts (Number of Additional Fire Fighters)**

	2000	2005	2015
San Bernardino	3	5	11
Redlands	1	2	4
Highland	1	1	2
Loma Linda	0	1	1
Colton	0	1	1
<b>Total</b>	<b>5</b>	<b>10</b>	<b>19</b>

Note: Excludes area-generated employee demands for San Bernardino.



Because responsibility for fire protection services at the main base site would revert to the San Bernardino Fire Department, the district would need an additional 11 fire fighters to serve the additional 2,097 acres.

The 30 acres of base property in the city of Highland would require one additional fire fighter in that fire department, based on the current service area per fire fighter.

Local fire districts and communities no longer would be able to rely on the Norton AFB Fire Department, which has specialized equipment and training for aviation and hazardous materials emergencies, to assist in fire protection, fire suppression, or hazardous materials emergency efforts.

**4.4.4.5 No-Action Alternative.** Under the No-Action Alternative, the U.S. Government would retain ownership of the Norton AFB property. A DMT would maintain the facilities and grounds. Fire protection impacts for the No-Action Alternative would be those described for closure in Section 3.4.4.4.

#### **4.4.5 Health Care**

Health care impacts are focused on their effects to military personnel, their dependents, and military retirees, since the Norton AFB clinic will be closed by 1994. This clinic would not reopen under the Proposed Action, but would be opened under the other reuse alternatives.

**4.4.5.1 Proposed Action.** Under the Proposed Action, the Norton AFB Clinic would be closed. Consequently, there may be a potential of increased cost for health care services to military retirees and their dependents who live in the ACS. Thirty-eight hospitals are licensed to provide inpatient health care in the ROI. A total of more than 6,600 beds are staffed to provide acute and chronic health care services within the two-county region. The majority of these facilities are currently utilized at 50 to 80 percent of their capacity. It is likely that the multiple health care facilities and medical personnel within the ROI are capable of serving the health care needs of the community after the closure of the Norton AFB clinic. Retirees can use CHAMPUS to pay for private health care provided in the community; however, they must pay a 25-percent copayment. Medical care to military retirees and their dependents is free at any base hospital. To receive their accustomed free health care, retirees would need to drive to March AFB hospital. That distance would impact all retirees who rely on public transportation, as well as those retirees whose poor health makes an extended drive impossible. The Jerry L. Pettis Memorial Hospital in Loma Linda is the closest VA hospital to Norton AFB.

**4.4.5.2 Airport with Mixed Use Alternative.** Under the Airport with Mixed Use Alternative, the clinic at Norton AFB would reopen as a neighborhood

clinic operated by a private party. This clinic will enhance local medical care for civilians, but the effects on military personnel and their dependents would be the same as those presented under the Proposed Action.

**4.4.5.3 Aircraft Maintenance Center Alternative.** Health care effects resulting from changes brought about by the implementation of the Aircraft Maintenance Center Alternative are identical to those presented for the Airport with Mixed Use Alternative.

**4.4.5.4 Non-Aviation Alternative.** Health care effects resulting from changes brought about by the implementation of the Non-Aviation Alternative are identical to those presented for the Airport with Mixed Use Alternative.

**4.4.5.5 No-Action Alternative.** Under the No-Action Alternative, the Norton AFB Clinic would be closed. Health care effects resulting from changes brought about by the implementation of the No-Action Alternative would be those described for closure in Section 3.4.4.5.

#### **4.5 PUBLIC FINANCE**

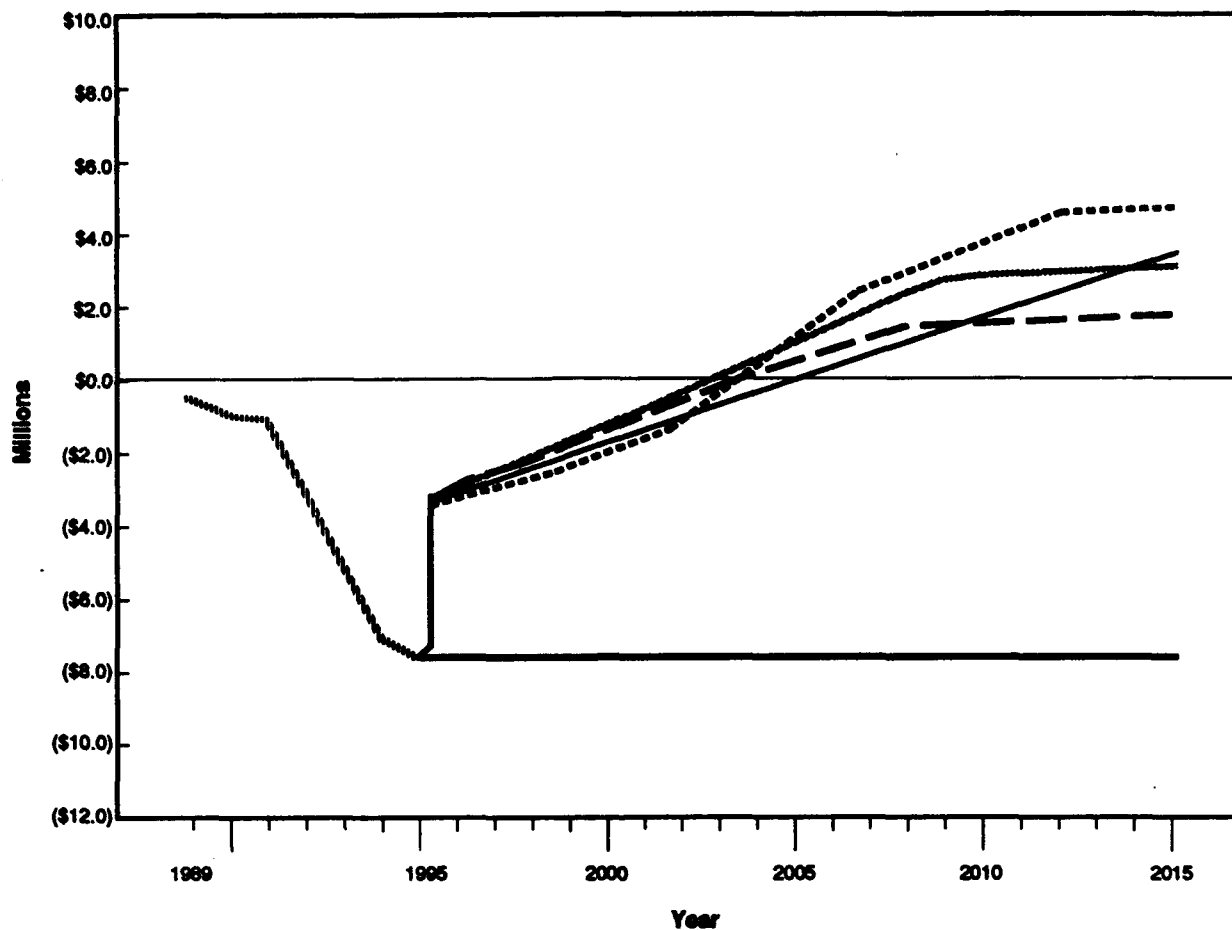
If no reuse actions occur at Norton AFB, post-closure net fiscal positions of affected local government jurisdictions are assumed to remain at their forecasted closure values assuming no offsetting governmental actions (see Chapter 3):

San Bernardino County	Shortfalls of \$7.6 million per year
City of San Bernardino	Shortfalls of \$1.5 million per year
San Bernardino City USD	Shortfalls of \$600,000 per year
City of Redlands	Shortfalls of \$700,000 per year
Redlands USD	Shortfalls of \$100,000 per year
City of Highland	Shortfalls of \$180,000 per year
City of Loma Linda	Shortfalls of \$270,000 per year
City of Colton	Shortfalls of \$200,000 per year

Figures 4.5-1 through 4.5-8 present the net fiscal effects to each jurisdiction compared to these projected closure levels for each proposed alternative reuse plan.

##### **4.5.1 Proposed Action**

Fiscal impacts to potentially affected jurisdictions under the Proposed Action are presented in this subsection. The results represent the net impacts of the Proposed Action after accounting for the out-migration of the direct and secondary military and civilian jobs associated with phasing out of the Norton AFB military mission.

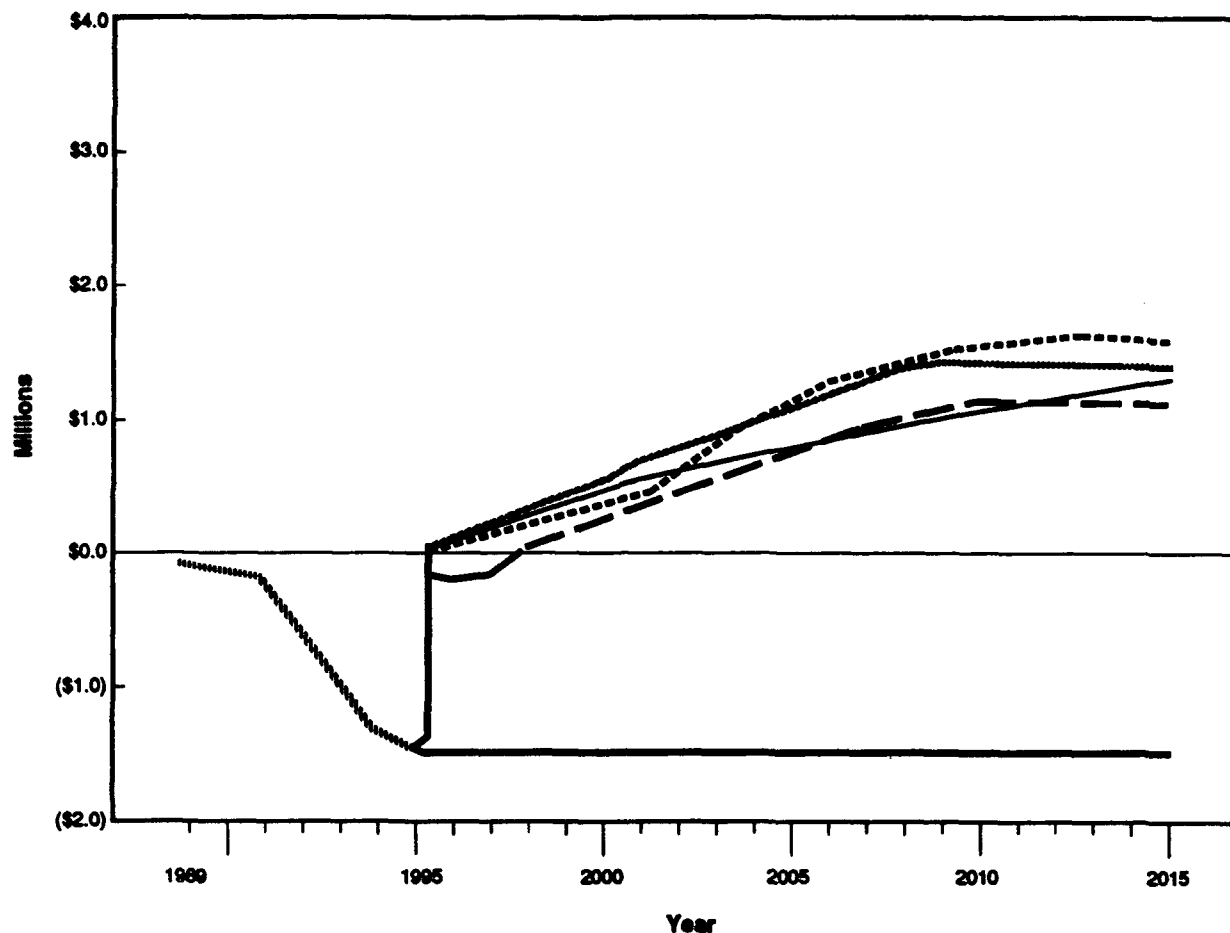


#### EXPLANATION

- Post-Closure/No-Action
- ..... Proposed Action
- Airport with Mixed Use
- - - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

**County of San Bernardino, Net Fiscal Projections, Proposed Action and Alternatives (1990 \$)**

**Figure 4.5-1**

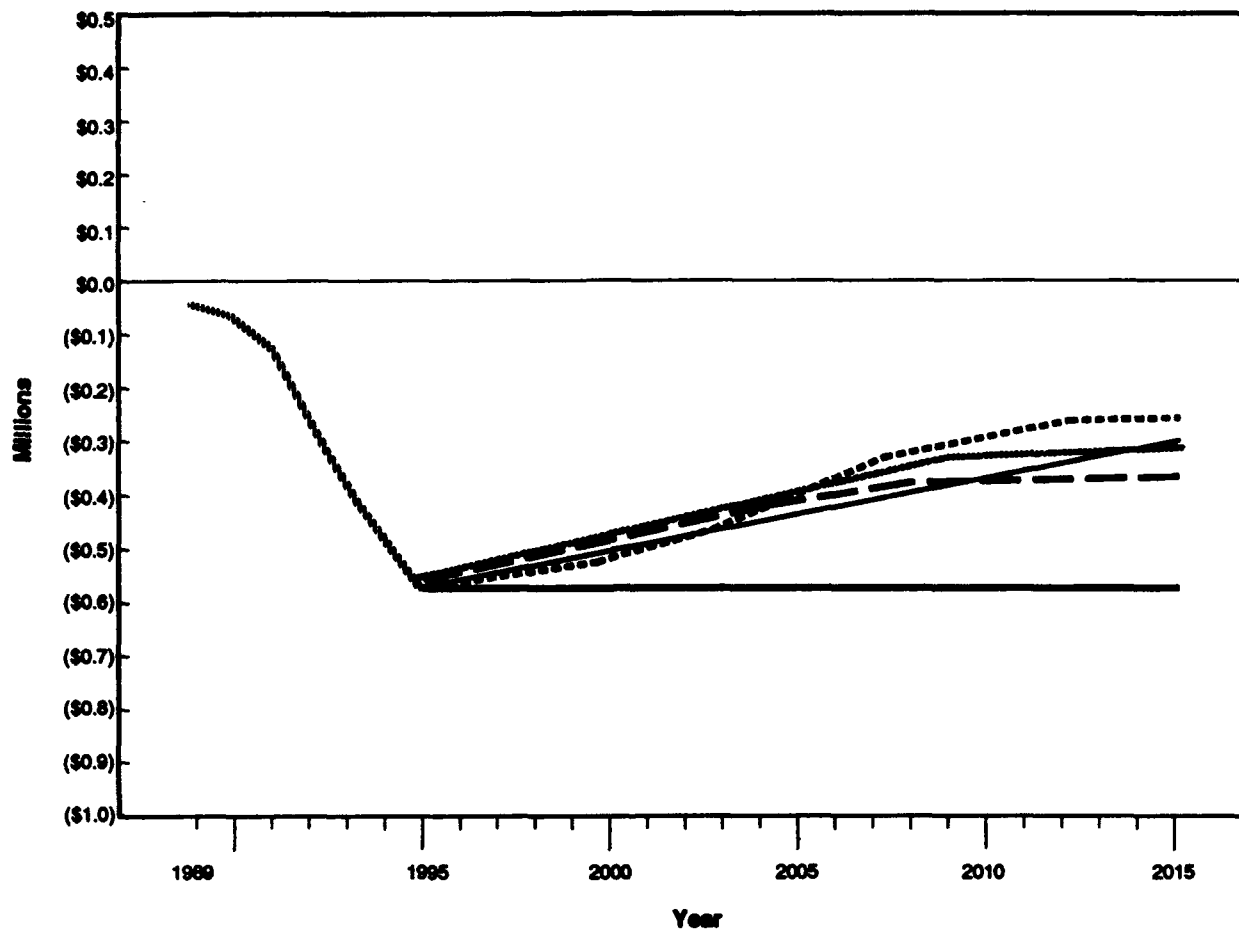


#### EXPLANATION

- Post-Closure/No-Action
- ..... Proposed Action
- ..... Airport with Mixed Use
- Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

**City of San Bernardino,  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1990 \$)**

**Figure 4.5-2**

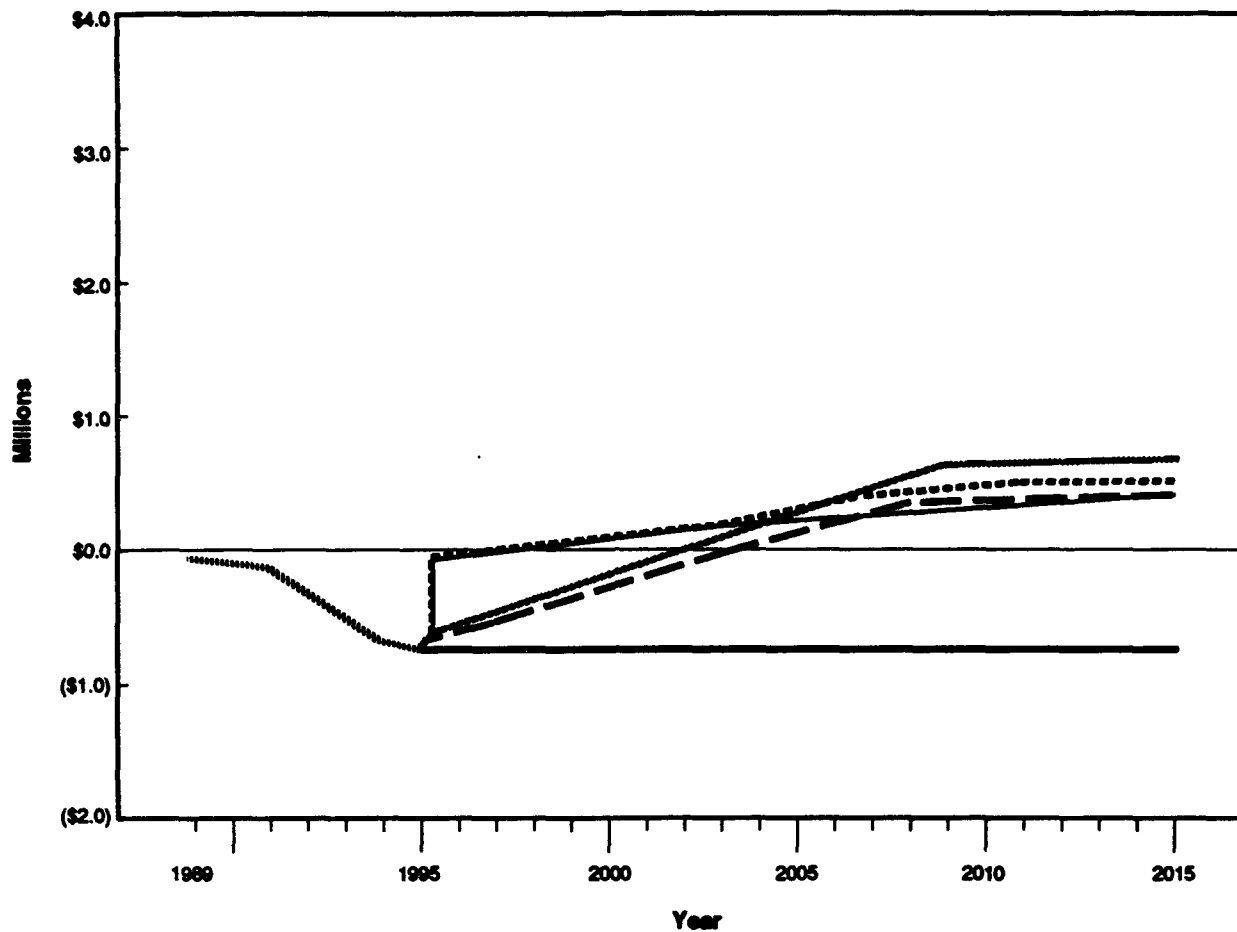


#### EXPLANATION

- Post-Closure/No-Action
- - - - - Proposed Action
- Airport with Mixed Use
- - - - - Aircraft Maintenance Center
- Non-Aviation
- - - - - Preclosure

**City of San Bernardino  
Unified School District,  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1990 \$)**

**Figure 4.5-3**

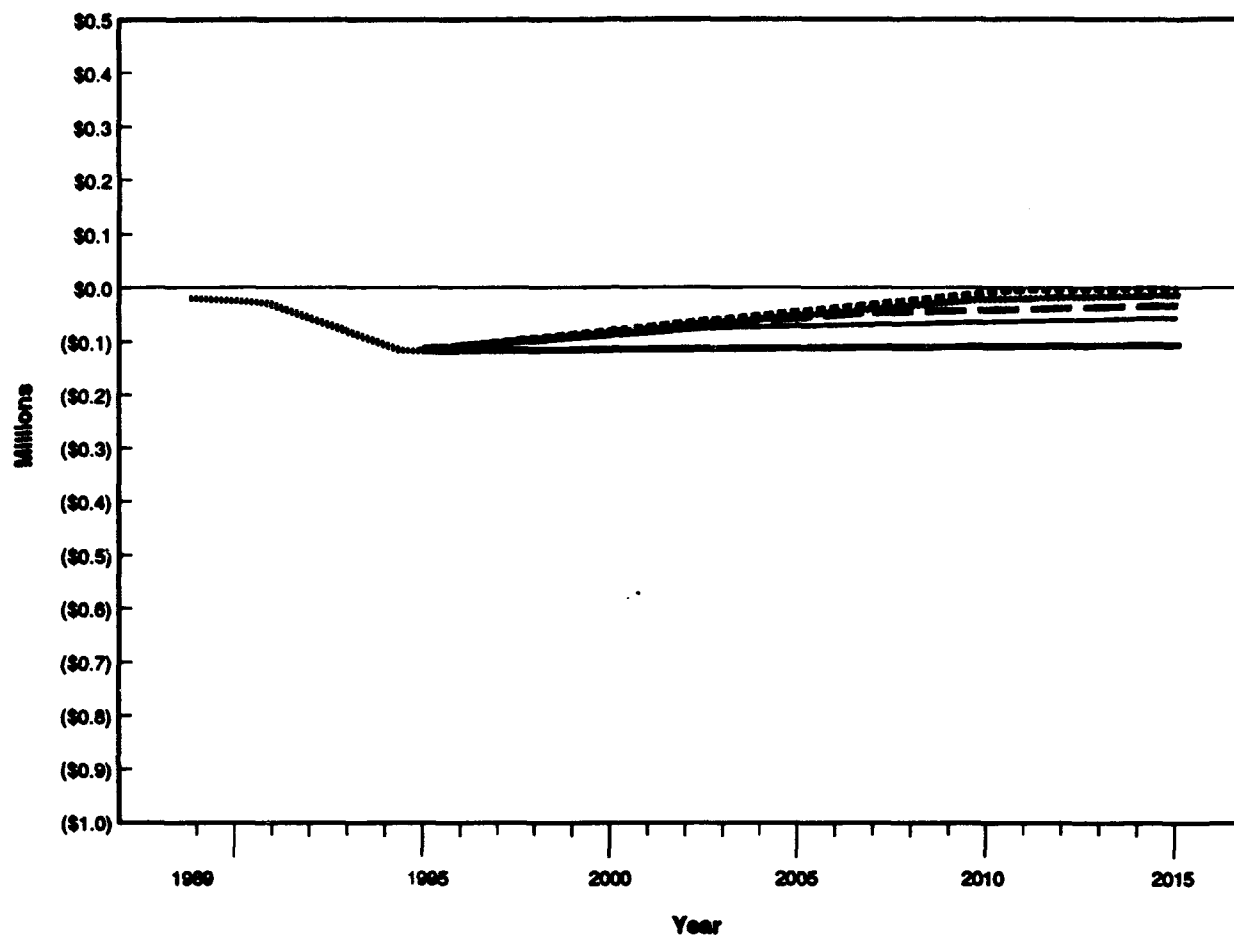


#### EXPLANATION

- Post-Closure/No-Action
- ..... Proposed Action
- Airport with Mixed Use
- . - . - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

**City of Redlands, Net  
Fiscal Projections,  
Proposed Action and  
Alternatives (1990\$)**

**Figure 4.5-4**

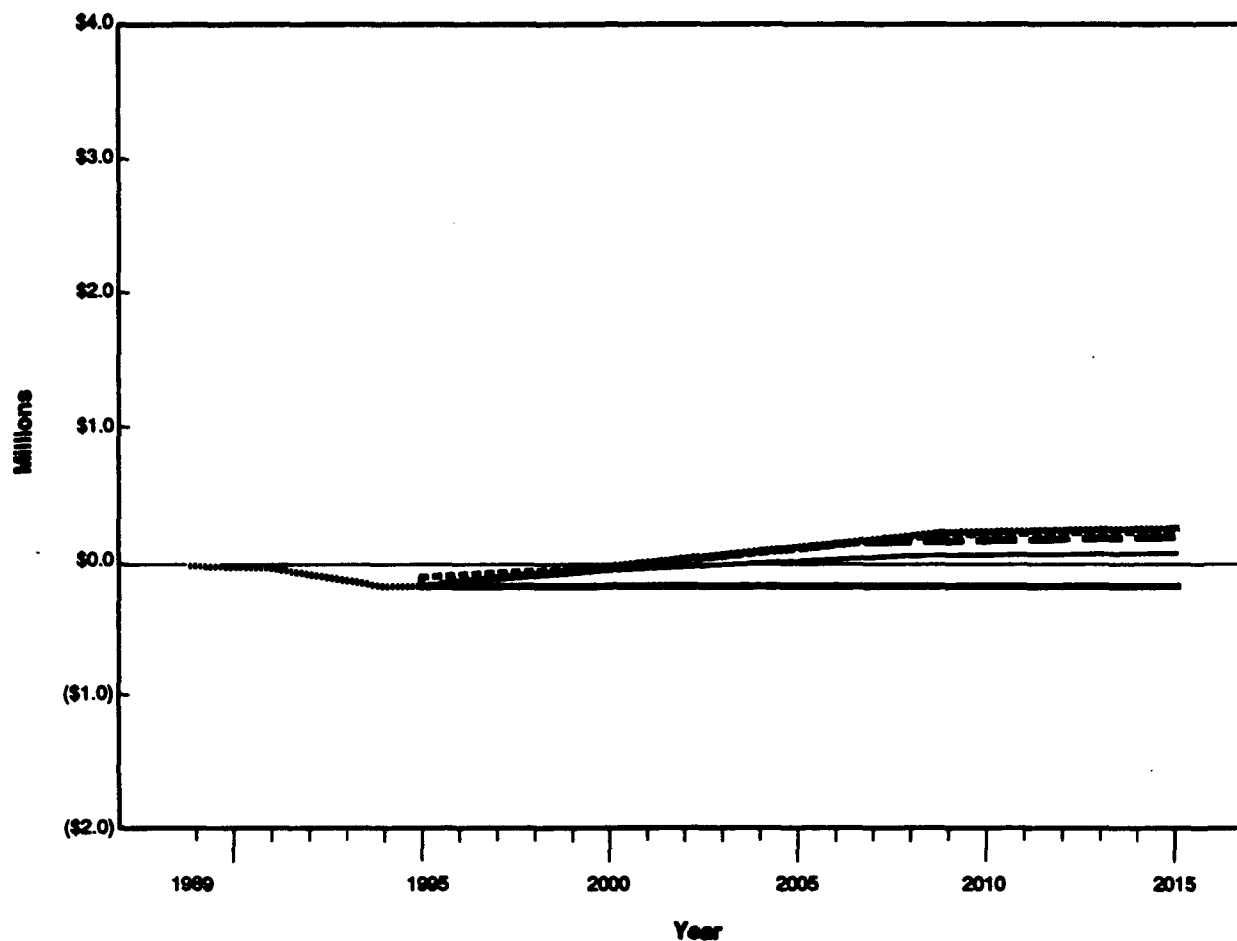


#### EXPLANATION

- Post-Closure/No-Action
- ..... Proposed Action
- Airport with Mixed Use
- - - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

**Redlands Unified  
School District, Net  
Fiscal Projections,  
Proposed Action and  
Alternatives (1990 \$)**

**Figure 4.5-5**



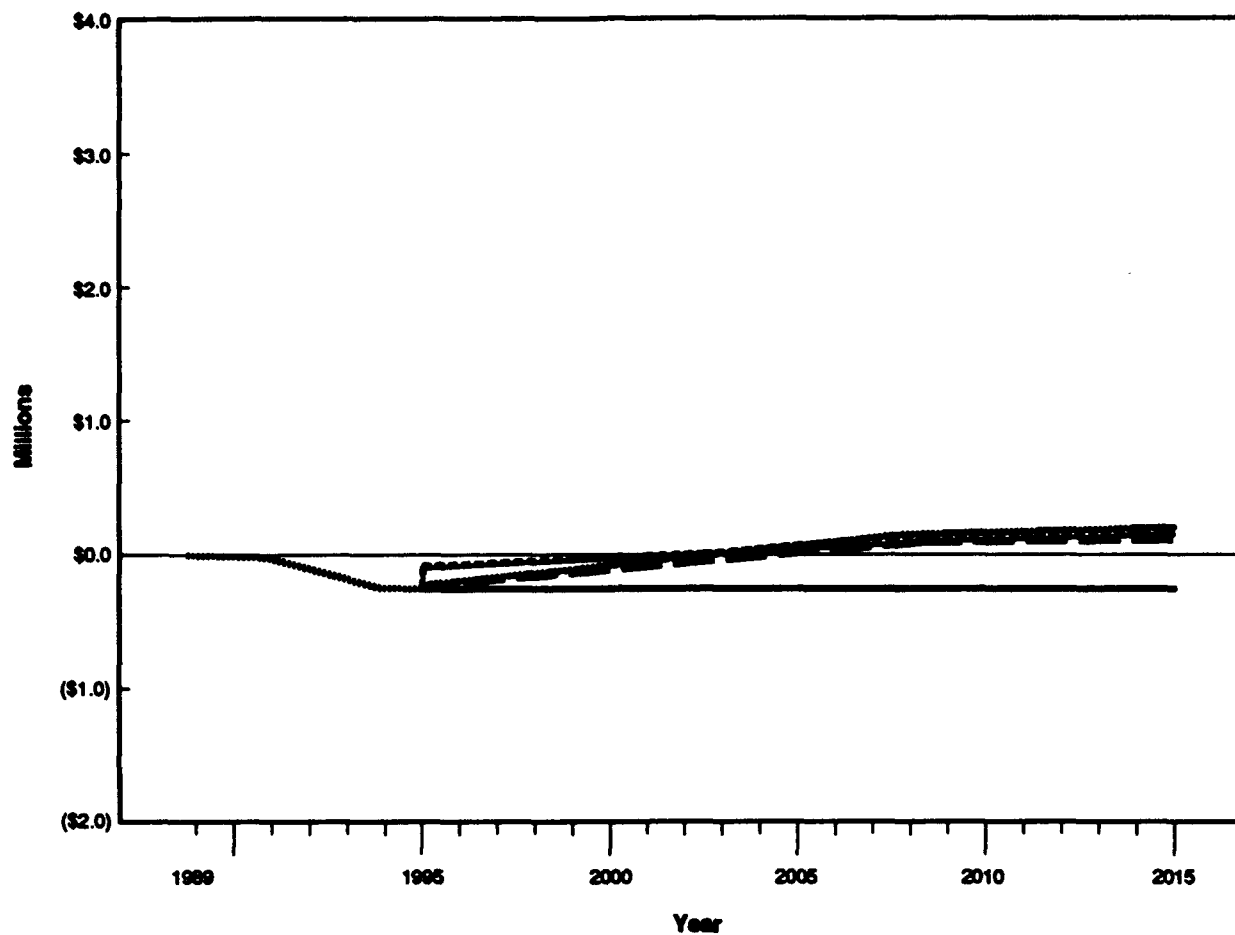
#### EXPLANATION

- Post-Closure/No-Action
- - - - - Proposed Action
- ..... Airport with Mixed Use
- . - . - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

**City of Highland, Net  
Fiscal Projections,  
Proposed Action and  
Alternatives (1990 \$)**

**Figure 4.5-6**



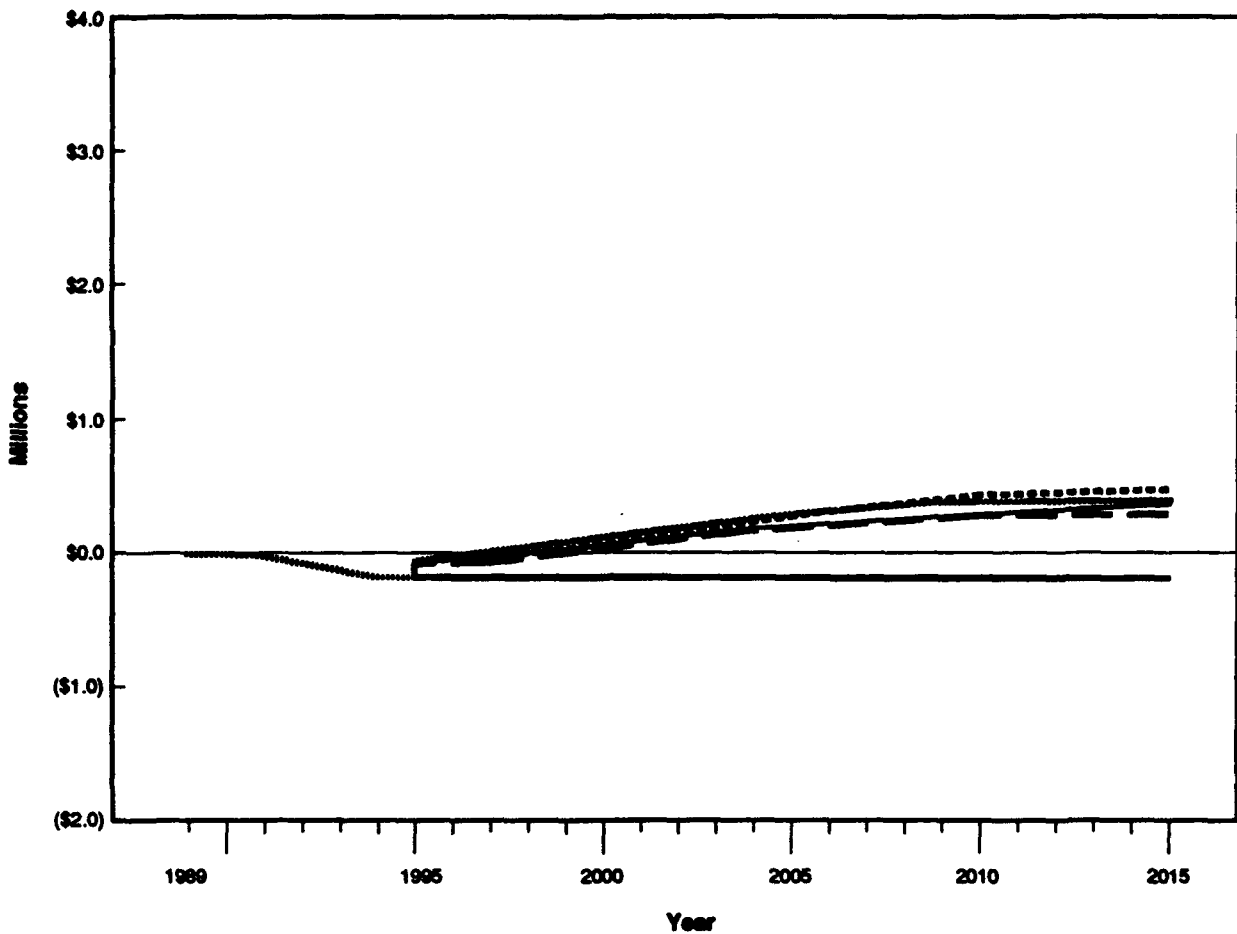


#### EXPLANATION

- Post-Closure/No-Action
- Proposed Action
- Airport with Mixed Use
- Aircraft Maintenance Center
- Non-Aviation
- Preclosure

**City of Loma Linda,  
Net Fiscal Projections,  
Proposed Action and  
Alternatives (1990 \$)**

**Figure 4.5-7**



#### EXPLANATION

- Post-Closure/No-Action
- - - - - Proposed Action
- ..... Airport with Mixed Use
- - - - - Aircraft Maintenance Center
- Non-Aviation
- ..... Preclosure

**City of Colton, Net  
Fiscal Projections,  
Proposed Action and  
Alternatives (1990 \$)**

**Figure 4.5-8**

The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next 20 years may result in higher property tax collections for those impacted jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.

Several key assumptions regarding future jurisdictional control of base property have been made that influence the fiscal assessments presented below. Under this alternative:

- An airport authority is formed and initially purchases or otherwise achieves control of 1,256 acres of base property. This authority would be responsible for operation and maintenance of all airport-related facilities.
- The entire project area becomes an IVDA redevelopment project.
- The 273 acres designated for public/recreational uses remain in public ownership.
- The 386 acres designated for industrial use and 66 acres designated for commercial use are eventually sold to private interests and thus are subject to local property taxes.

Airport facilities and public/recreational land are proposed to be acquired at a discounted price through public benefit conveyance. This discount can be up to 100 percent of fair market value. Airport-related improvements would be funded through a combination of grants, revenue bonds, and tax-increment financing.

Because the airport is proposed to be funded principally through user charges (e.g., landing fees, fuel flowage fees, passenger fees, rental income), local taxes are not expected to be affected by project development. If, however, some portions of either acquisition or development are funded through general obligation bond instruments, increased local property taxes would be expected. Issuance of general obligation bonds, however, requires approval by a two-thirds majority vote.

Since the base is mostly within the city limits of San Bernardino, public services would be provided by the city of San Bernardino except for the 30-acre parcel in the city of Highland. In addition, the airport authority itself would be responsible for specialized fire suppression provisions and security for direct airport-related activities. If member jurisdictions of the airport authority are required to contribute additional monies to maintain airport operations, impacts to existing public services (i.e., reduced service levels) may occur in the absence of offsetting revenue increases (i.e., increased local taxes).

Property to be used for industrial or commercial purposes and not part of an airport conveyance would be purchased. The redevelopment authority may negotiate a purchase of this property with the federal government. However, private interests must participate in a competitive bid procedure. Funding sources for purchase of industrial and commercial land by the airport authority would include private financing through funds available from private developers who establish contractual agreements with IVDA and redevelopment funds from the IVDA.

#### **County of San Bernardino**

Analysis of the projected fiscal effects of the Proposed Action indicates a net positive effect compared to the post-closure scenario over the FY 1995 to 2015 period. Service demands as a result of the increase in county residents are estimated to require about \$5 million annually by build out. Increased revenues, principally from increased intergovernmental transfers, charges for services, and sales and other tax revenue, are projected to more than offset expenditure demands. Total general and special revenue fund revenue increases are projected to be \$17.4 million.

These revenue increases, however, would not be sufficient in the early years of project development to offset projected closure deficits. During the FY 1995 to 2003 period, the county would still be faced with deficits ranging up to approximately \$4 million (occurring in FY 1995 and decreasing through FY 2003). These shortfalls would require some response by the county through service cutbacks and/or increases in tax and non-tax revenue schedules. By FY 2004, the positive fiscal effects of the Proposed Action will have offset projected deficits due to base closure.

#### **City of San Bernardino**

Similar to the county of San Bernardino, the projected fiscal effects of the Proposed Action indicate a net positive effect when compared to the post-closure scenario (base closed and under caretaker status) over all years analyzed (FY 1995 through FY 2015). Increased general and special revenue fund revenues are projected at approximately \$5.2 million by build out (FY 2015). Increased sales and use taxes and intergovernmental transfers are the principal revenue sources affected. Expenditure demands on the city are projected at only \$2.1 million by FY 2015. These increases are due principally to the additional area requiring service by city departments and the service demands associated with new city residents. The projected increase in net revenues will more than offset projected deficits estimated under the post-closure scenario over the entire FY 1995 to 2015 period.

### **San Bernardino City Unified School District**

Growth associated with reuse of the base would represent a positive change compared to the post-closure scenario. District funding is principally from revenue limit sources, which are comprised of state apportionments. This base revenue limit amount is approximately \$3,000 per pupil (in constant 1990 dollars). In addition, other state and local source revenue contributes approximately \$1,300 per pupil. Based on a projected increase of students, increased revenue limit source revenue is projected at approximately \$6.7 million at build out (FY 2015). Because the incremental property taxes associated with base reuse would flow to the redevelopment agency rather than the district, this increase would be comprised principally of state apportionment aid. State funding, however, is subject to legislative appropriation and may or may not keep pace with local costs. Although the district has an agreement with the redevelopment agency for a portion of the incremental property taxes to be held in trust on behalf of the district, these monies are currently not considered local source revenue and would not enter into state formulas for calculating state aid contributions. These monies (amounting to about \$176 million over a 40-year period) would also be limited to capital improvements only.

Total general fund revenue increases, including revenue from other miscellaneous state and local sources are projected to be approximately \$10.2 million at build out. The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold, its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next 20 years may result in higher property tax collections for those impacted jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.

These revenue increases, however, would not be sufficient to offset projected deficits. By build out, revenue shortfalls would still be approximately \$250,000. This is due to the loss of P.L. 81-874 funds that are not replaced with state source revenue or entered into state revenue limit calculations and the inability of other revenue sources to keep up with increased costs. Shortfalls of this magnitude would represent less than 0.1 percent of the district's operating budget of approximately \$170 million. If Section 3 transition entitlements are fully funded, these effects would be less and would be apportioned in reducing amounts over a 3-year period starting in FY 1995.

The results assume Proposition 98 funding guarantees (which require about 40 percent of the state's general fund budget to be spent on local education) would remain in effect at current levels. A reduction in the cost-of-living adjustments previously estimated for the district and/or reduced revenue availability at the state level would result in lower state revenue

apportionments and increased shortfalls. The projected deficits assume no new revenue sources are made available, or further cutbacks in service levels are implemented.

#### **City of Redlands**

Analysis of the projected fiscal effects of the Proposed Action by itself indicates a net positive effect when compared to the post-closure scenario (base closed and under caretaker status) over the FY 1995 to 2015 period. Increased general and special revenue fund revenues are projected at approximately \$1.7 million by build out (FY 2015). The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure demands on the city are projected to be about \$500,000 by FY 2015. These increases are due principally to the service demands associated with new city residents. The projected increase in net revenues will more than offset projected deficits due to base closure over the FY 1998 to 2015 period. Minor shortfalls are estimated during the buildup phase, FY 1995 to 1997.

#### **Redlands Unified School District**

Net fiscal effects of the Proposed Action would represent a positive change compared to the post-closure scenario. Local property taxes and state revenue limit apportionments are the district's primary source of revenues. The district also receives other state, local, and federal revenues. Based on revenue source limits of approximately \$3,230 per pupil (in constant 1990 dollars) revenue limit source revenue is projected to increase by about \$3.9 million by FY 2015. Because the base is not located within district boundaries and would have no effect on the tax base of the district, this increase will principally be due to increases in the state apportionments (assuming entitlements are fully funded at the state level). Total revenue increases are estimated to be approximately \$4.7 million. Revenue increases would offset projected deficits under the post-closure scenario by FY 2012. However, increases would not be sufficient to offset projected closure deficits until late in project development (after FY 2011). Deficits ranging up to approximately \$100,000 (occurring in FY 1995 and decreasing annually through FY 2011) are projected. Additional revenue sources and/or service cutbacks would be required to offset the projected shortfall.

#### **City of Highland**

Fiscal effects of the Proposed Action indicate a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general fund revenues are projected at approximately \$500,000 by build out (FY 2015). The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure

demands on the city are projected at \$200,000 at build out. These increases are due principally to the service demands associated with new city residents (net of projected out-migration due to base closure). The projected increase in net revenues will more than offset projected deficits estimated under the post-closure scenario by build out. However, these increases would not be sufficient to offset projected closure deficits during the early years of project development (FY 1995 to 2002). Deficits ranging up to approximately \$100,000 (occurring in FY 1995 but decreasing annually through FY 2002) are projected.

#### **City of Loma Linda**

Fiscal effects of the Proposed Action by itself indicate a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general fund revenues are projected at approximately \$600,000 by build out (FY 2015). The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure demands on the city are projected at \$100,000. These increases are due principally to the service demands associated with new city residents (net of projected out-migration due to base closure). The projected increase in net revenues will more than offset projected deficits estimated under the post-closure scenario by build out. However, these increases would not be sufficient to offset projected closure deficits during the early years of project development (FY 1995 to 2002). Deficits ranging up to approximately \$100,000 (occurring in FY 1995) are projected. These shortfalls would require some response by the city either through service cutbacks, or increases in the tax and non-tax revenue schedules, or both.

#### **City of Colton**

Fiscal effects of the Proposed Action by itself indicate a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general fund revenues are projected at approximately \$800,000 by build out. The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure demands on the city are projected at \$100,000 at build out. These increases are due principally to the service demands associated with new city residents (net of projected out-migration due to base closure). The projected increase in net revenues will more than offset projected deficits estimated under the post-closure scenario by build out. However, these increases would not be sufficient to offset projected closure deficits during the early years of project development (FY 1995 to 1998). Deficits ranging up to approximately \$100,000, occurring in FY 1995 but decreasing annually through FY 1998, are projected. These shortfalls would require some response by the city either through service cutbacks, or increases in the tax and non-tax revenue schedules, or both.

#### **4.5.2 Airport with Mixed Use Alternative**

Fiscal impacts to potentially affected jurisdictions under this alternative are presented in this subsection. The results represent the net effects of the alternative after accounting for the out-migration of the direct and indirect military and civilian jobs associated with phasing out the Norton AFB military mission.

The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next 20 years may result in higher property tax collections for those impacted jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.

Several key assumptions regarding future jurisdictional control of base property have been made that influence the fiscal assessments presented below. Under this alternative:

- An airport authority is formed and initially purchases or otherwise achieves control of 1,163 acres of base property. This authority would be responsible for operation and maintenance of all airport-related facilities.
- The entire project area becomes a redevelopment project.
- The 1,163 acres designated for airport and aviation support uses and the 298 acres designated for public/recreational uses remain in public ownership.
- The 394 acres designated for industrial use, the 57 acres designated for commercial use, the 8 acres designated as medical, and the 61 acres designated for residential use are eventually sold to private interests and thus subject to local property taxes.

Airport facilities and public/recreational land are proposed to be acquired at a discounted price through public benefit conveyance. This discount can be up to 100 percent of fair market value. Airport-related improvements would be funded through a combination of grants, revenue bonds, and tax-increment financing.

Because the airport is proposed to be funded principally through user charges (e.g., landing fees, fuel flowage fees, passenger fees, rental income), local taxes are not expected to be affected by project development. If, however, some portions of either acquisition or development are funded through general obligation bond instruments,



increased local property taxes would be expected. Issuance of general obligation bonds, however, are subject to local voter approval.

Since the base is within the city limits of San Bernardino except for the 30-acre parcel in Highland, public service would be provided by city agencies. In addition, the airport authority itself would be responsible for provision of specialized fire suppression activities and security for direct airport-related activities. If member jurisdictions of the airport authority are required to contribute additional monies to maintain airport operations, impacts to existing public services (i.e., reduced service levels) may occur in the absence of offsetting revenue increases (i.e., increased local taxes).

Property to be used for industrial or commercial purposes and not part of an airport conveyance must be purchased. The airport authority may negotiate a purchase of this property with the federal government. However, private interests must participate in a competitive bid procedure. Funding sources for purchase of industrial and commercial land by the airport authority would include private financing through funds available from private developers' redevelopment funds from a redevelopment agency.

#### **County of San Bernardino**

Analysis of the projected fiscal effects of the alternative indicates a positive effect on county finances compared to the post-closure scenario. Revenue increases at build out (FY 2015) are estimated to be \$13.9 million, which would offset projected deficits estimated under the closed base scenario. Revenue increases would not be sufficient to offset projected closure deficits during the early years of project development (FY 1995 to 2002). Shortfalls ranging up to approximately \$3.3 million (occurring in FY 1995) would still require some response by the county through service cutbacks and/or increases in tax and non-tax revenue schedules.

#### **City of San Bernardino**

Analysis of the projected fiscal effects of this alternative indicates a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general and special revenue fund revenues are projected at approximately \$4.3 million by build out (FY 2015). The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure demands on the city are projected at \$1.4 million at build out. These increases are due principally to the additional land requiring servicing by city departments and the service demands associated with new city residents (net of projected out-migration due to base closure). The projected increase in net revenues will more than offset projected deficits due to base closure estimated under the post-closure scenario in all years over the FY 1995 to 2015 period.

### **San Bernardino City Unified School District**

Growth associated with reuse of the base under this alternative would represent a positive change compared to the post-closure scenario. District funding is principally comprised of local property taxes and state apportionment aid. The base revenue limit amount per pupil is approximately \$3,000 (in constant 1990 dollars). In addition, other state and local source revenues contribute approximately \$1,300 per pupil. Total revenue limit source revenue is projected to increase approximately \$5.3 million by FY 2015. Because the incremental property taxes associated with base reuse would flow to the redevelopment agency rather than the district, these increases would be comprised principally of state apportionment aid. State funding, however, is subject to legislative appropriation and may or may not keep up with local costs. Although the district has an agreement with the redevelopment agency for a portion of the incremental property taxes to be held in trust on behalf of the district, these monies are currently not considered local source revenue and would not enter into state formulas for calculating state aid contributions. These monies would also be limited to capital improvements only. Total general fund revenue increases, including revenue from other miscellaneous state and local sources, are projected to be approximately \$8.1 million at build out.

These revenue increases, however, would not be sufficient to offset projected closure deficits. By build out, revenue shortfalls would still be approximately \$300,000. This is due principally to the loss of P.L. 81-874 funds that are not replaced with state source revenue or entered into state revenue limit calculations. Shortfalls of this magnitude would represent about 0.2 percent of the district's operating budget.

The results assume Proposition 98 funding guarantees remain in effect at current levels. A reduction in the cost-of-living adjustments previously estimated for the district and/or reduced revenue availability at the state level would result in lower state revenue apportionments and increased shortfalls. Additional revenue sources and/or service cutbacks would be required to offset the projected shortfalls.

### **City of Redlands**

Analysis of the projected fiscal effects of the alternative indicates a positive fiscal effect on city finances compared to the post-closure scenario. Revenue increases at build out (FY 2015) are estimated to be \$1.4 million, which would offset projected deficits estimated under the closed base scenario. Revenue increases, however, would not be sufficient to offset projected closure deficits during the early years of project development (FY 1995 to 2001). Shortfalls of approximately \$700,000 (occurring in FY

1995) would still require some response by the city either through service cutbacks and/or increases in tax and non-tax revenue schedules.

#### **Redlands Unified School District**

Net fiscal effects of the alternative would represent a positive change compared to the post-closure scenario. Local property taxes and state revenue limit apportionments are the district's primary source of revenues. The district also receives other state, local, and federal revenues. Total revenue increases due to the alternative itself are estimated to be approximately \$3.7 million at build out. Expenditure requirements are estimated at about \$3.6 million. However, these increases would not be sufficient to offset projected closure deficits. Deficits of about \$20,000 annually at build out are projected. Additional revenue sources and/or service cutbacks would be required to offset the projected shortfall.

#### **City of Highland**

Fiscal effects of the alternative indicates a net positive effect when compared to the post-closure scenario (base closed and under caretaker status) over the FY 1995 to 2015 period. Increased revenue, particularly from increased sales and use taxes, would more than offset projected closure deficits by build out. Total general fund revenue increases at build out (FY 2015) due to the alternative itself are estimated at about \$400,000. Increases in the early years of the project (FY 1995 to 2001), however, would not be sufficient to offset projected deficits due to base closure and shortfalls ranging up to approximately \$200,000 (occurring in FY 1995 but decreasing annually through FY 2001) are projected. These shortfalls would require some response by the city through service cutbacks and/or increases in tax and non-tax revenue schedules.

#### **City of Loma Linda**

Fiscal effects of this alternative would be positive compared to the post-closure scenario. Revenue increases at build out are estimated to be \$500,000, which would effectively offset projected deficits estimated under the closed base scenario. However, these increases would not be sufficient to offset projected deficits due to base closure during the early years of project development (FY 1995 to 2001). Shortfalls ranging up to approximately \$200,000 (occurring in FY 1995) would still require some response by the city either through service cutbacks or increases in tax and non-tax revenue schedules.

#### **City of Colton**

Fiscal effects of this alternative would be positive compared to the post-closure scenario. Revenue increases at build out are estimated to be

\$700,000, which would more than offset projected deficits estimated under the closed base scenario. However, these increases would not be sufficient to offset projected deficits due to base closure during the early years of project development (FY 1995 to 1997). Shortfalls ranging up to approximately \$100,000 (occurring in FY 1995) would still require some response by the city either through service cutbacks and/or increases in tax and non-tax revenue schedules.

#### **4.5.3 Aircraft Maintenance Center Alternative**

Fiscal impacts to potentially affected jurisdictions under this alternative are presented in this section. The results represent the net effects of the alternative after accounting for the out-migration of the direct and secondary military and civilian jobs associated with phasing out the Norton AFB military mission.

The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next 20 years may result in higher property tax collections for those impacted jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.

Several key assumptions regarding future jurisdictional control of base property have been made that influence the fiscal assessments presented below. Under this alternative:

- A development authority is formed and initially purchases or otherwise achieves control of 926 acres of base property. This authority would be responsible for operation and maintenance of all airfield and aviation support facilities.
- The entire project area becomes a redevelopment project.
- The 926 acres designated for airfield and aviation support uses, the 309 acres designated for aggregate mining, and the 298 acres designated for public/recreational uses remain in public ownership.
- The 324 acres designated for industrial use, the 55 acres designated for commercial use, the 8 acres designated for medical use, and the 61 acres designated for residential use are eventually sold to private interests and thus subject to local property taxes. Aggregate mining activity also is undertaken by private interests through lease agreements with the airport authority.

Airfield facilities and public/recreational land are proposed to be acquired at a discounted price through public benefit conveyance. This discount can be up to 100 percent of fair market value. Airfield-related improvements would be funded through a combination of grants, revenue bonds, and tax-increment financing.

Because the airport is proposed to be funded principally through user charges (e.g., landing fees, fuel flowage fees, rental income), local taxes are not expected to be affected by project development. If, however, some portions of either acquisition or development are funded through general obligation bond instruments, increased local property taxes would be expected. Issuance of general obligation bonds, however, is subject to local voter approval.

Since the base is within the city limits of San Bernardino except for a 30-acre parcel in Highland, public services would be provided by the city of San Bernardino. In addition, the airport authority itself would be responsible for provision of specialized fire suppression activities and security for direct airfield-related activities. If member jurisdictions of the airport authority are required to contribute additional monies to maintain airport operations, impacts to existing public services (i.e., reduced service level) may occur in the absence of offsetting revenue increases (i.e., increased local taxes).

Property to be used for industrial or commercial purposes and not part of an airport conveyance must be purchased. The airport authority may negotiate a purchase of this property with the federal government. However, private interests must participate in a competitive bid procedure. Funding sources for purchase of industrial and commercial land by the airport authority would include private financing through funds available from private developers or from redevelopment funds.

#### **County of San Bernardino**

Projected fiscal effects of the alternative by itself indicates a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Revenue increases at build out (FY 2015) are estimated to be \$12.2 million, which would offset projected deficits estimated under the closed base scenario. Revenue increases, however, would not be sufficient to offset deficits during the early years of project development (FY 1995-2003). Shortfalls ranging up to \$3.3 million (occurring in FY 1995 but decreasing through FY 2003) would still require some response by the county through service cutbacks and/or increases in tax and non-tax revenue schedules.

### **City of San Bernardino**

Analysis of the projected fiscal effects of the alternative by itself indicates a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general and special revenue fund revenues are projected at approximately \$3.4 million by build out (FY 2015). Increased sales and use taxes and intergovernmental transfers are the principal revenue sources affected. Expenditure demands on the city are projected at \$800,000 at build out. These increases are due principally to the service demands associated with the additional area requiring service by city departments and new city residents. The projected increase in net revenues will more than offset projected deficits estimated under post-closure conditions over the FY 1998-2015 period. During the buildup phase, however, shortfalls ranging up to \$100,000 (occurring in FY 1995 but decreasing through FY 1997) are projected. The projected shortfalls assume no new revenues are made available, or cutbacks in service levels are implemented.

### **San Bernardino City Unified School District**

Growth associated with reuse of the base under this alternative would represent a positive change compared to the post-closure scenario. District funding is principally from revenue limit sources that are comprised of property taxes and state apportionments. This base revenue limit amount is approximately \$3,000 per pupil (in constant 1990 dollars). In addition, other state and local source revenue contributes approximately \$1,300 per pupil. Increased revenue limit source revenue is projected at approximately \$5.2 million by build out (FY 2015). Because the incremental property taxes associated with base reuse would flow to the redevelopment agency rather than the district, these increases would be comprised principally of the state apportionment component of the base revenue limit amount. Although the district has an agreement with the redevelopment agency for a portion of the incremental property taxes to be held in trust on behalf of the district, these monies are currently not considered local source revenue and would not enter into state formulas for calculating state aid contributions. These monies would also be limited to capital improvements only. Total general fund revenue increases, including revenue from other miscellaneous state and local sources, are projected to be approximately \$6.5 million at build out.

These revenue increases, however, would not be sufficient to offset projected closure deficits. By FY 2015, revenue shortfalls would still be approximately \$400,000. This is due principally to the loss of P.L. 81-874 funds that are not replaced with state source revenue or entered into state revenue limit calculations.

The results assume Proposition 98 funding guarantees remain in effect at current levels. A reduction in the cost-of-living adjustments previously estimated for the district and/or reduced revenue availability at the state level would result in lower state revenue apportionments and increased shortfalls. Additional revenue sources and/or service cutbacks would be required to offset the projected shortfalls.

#### **City of Redlands**

The net fiscal effects of the alternative itself would represent a positive change compared to the post-closure scenario. Revenue increases at build out (FY 2015) are estimated to be \$1.1 million, which would offset projected deficits estimated under the closed base scenario. Revenue increases, however, would not be sufficient to offset deficits during the early years of project development (FY 1995-2003). Shortfalls ranging up to \$700,000 (occurring in FY 1995 but decreasing through FY 2003) would still require some response by the city through service cutbacks and/or increases in tax and non-tax revenue schedules.

#### **Redlands Unified School District**

Net fiscal effects of the alternative itself would represent a positive change compared to the post-closure scenario. Revenue limit sources are the district's primary source of revenues and are comprised of a combination of local property taxes and state revenue limit apportionments. The district also receives other state, local, and federal revenues. Total revenue increases due to the alternative itself are estimated to be approximately \$3 million at build out (FY 2015). Expenditure requirements are estimated at about \$2.9 million. However, these increases would not be sufficient to offset projected closure deficits and shortfalls ranging up to about \$60,000 annually at build out. Additional revenue sources and/or service cutbacks would be required to offset the projected shortfalls.

#### **City of Highland**

Fiscal effects of the alternative itself indicate a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Total general fund revenue increases at build out (FY 2015) due to the alternative itself are estimated at about \$300,000, which would more than offset projected post-closure deficits. However, increases in the early years of project development (FY 1995-2000) would not be sufficient to offset projected deficits and shortfalls ranging up to \$100,000 (occurring in FY 1995 but decreasing through FY 2000). These shortfalls would require some response by the city through service cutbacks and/or increases in tax and non-tax revenue schedules.

### **City of Loma Linda**

Fiscal effects of the alternative itself indicate a net positive effect when compared to the post-closure scenario. The population change between the closed base scenario and this alternative, however, would represent an addition of less than 100 residents to the city. Changes of this magnitude are likely to require very little response by city agencies. The replacement of military jobs with civilian jobs, however, would have a positive effect on city revenues. Revenue increases at build out are estimated to be \$400,000, which would effectively offset projected deficits estimated under the closed base scenario. However, these increases would not be sufficient to offset deficits during the early years of project development (FY 1995-2003). Shortfalls ranging up to \$200,000 (occurring in FY 1995 but decreasing annually through FY 2003) would still require some response by the city through service cutbacks and/or increases in tax and non-tax revenue schedules.

### **City of Colton**

Similar to the city of Loma Linda, population increases associated with reuse under this alternative would represent an addition of less than 200 residents to the city. Changes of this magnitude are likely to require very little response by city agencies. The replacement of military jobs with civilian jobs, however, would have a positive effect on city revenues. Revenue increases at build out are estimated to be \$500,000 which would more than offset projected deficits estimated under the closed base scenario. However, these increases would not be sufficient to offset deficits during the early years of project development (FY 1995-1997). Shortfalls ranging up to \$100,000 (in FY 1995) would still require some response by the city through service cutbacks and/or increases in tax and non-tax revenue schedules.

#### **4.5.4 Non-Aviation Alternative**

Fiscal impacts to potentially affected jurisdictions under this alternative are presented in this subsection. The results represent the net effects of the alternative after accounting for the out-migration of the direct and indirect military and civilian jobs associated with phasing out the Norton AFB military mission.

The revenue calculations do not take into account the effects from Proposition 13. Under Proposition 13 whenever a home is sold its value is reassessed by the county for property tax purposes. The strong level of housing demand projected over the next 20 years may result in higher property tax collections for those impacted jurisdictions due to the turnover in housing anticipated from the base's closure and subsequent reuse.



Several key assumptions regarding future jurisdictional control of base property have been made that influence the fiscal assessments presented below. Under this alternative:

- The entire project area becomes a redevelopment project. The redevelopment agency initially purchases or otherwise achieves control of 1,981 acres of base property.
- The 501 acres designated as industrial, the 63 acres designated as commercial, the 8 acres designated as medical, and the 1,119 acres designated as residential are eventually transferred to private ownership.
- The 290 acres designated as recreation remain in public ownership.

#### **County of San Bernardino**

The projected fiscal effects of the Non-Aviation Alternative indicate a net positive effect compared to the post-closure scenario. Service demands associated with an increase in county residents are estimated to require about \$3.5 million annually by build out. Increased revenues, principally from increased intergovernmental transfers, charges for services, and sales and other tax revenue, are projected to more than offset expenditure demands. Total general and special revenue fund revenue increases are projected to be \$14.6 million by FY 2015.

These revenue increases, however, would not be sufficient in the early years of project development (FY 1995 to 2004) to offset projected closure deficits. During the FY 1995 to 2003 period, the county would still be faced with deficits of approximately \$4 million (beginning in FY 1995). The projected deficits assume no additional revenues are made available and no cutbacks in service levels are implemented.

#### **City of San Bernardino**

Analysis of the projected fiscal effects of the alternative indicates a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general and special revenue fund revenues are projected at approximately \$4.3 million by build out. The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure demands on the city are projected at only \$1.6 million at build out. These increases are due principally to the service demands associated with new city residents and the additional area requiring service by city departments. The projected increase in net revenues will more than offset projected deficits estimated under the post-closure scenario over all years of the project.

### **San Bernardino City Unified School District**

Growth associated with reuse of the base would represent a positive change compared to the post-closure scenario. District funding is principally comprised of local property taxes and state apportionment aid. The base revenue limit amount is approximately \$3,000 per pupil. In addition, other state and local source revenues contribute approximately \$1,300 per pupil. Total revenue limit source revenue is projected to increase approximately \$5.6 million. Because the incremental property taxes associated with base reuse would flow to the redevelopment agency rather than the district, this increase would be comprised principally of state apportionment aid. Although the district has an agreement with the redevelopment agency for a portion of the incremental property taxes to be held in trust on behalf of the district, these monies are currently not considered local source revenue and would not enter into state formulas for calculating state aid contributions. These monies would also be limited to capital improvements only. Total general fund revenue increases, including revenue from other miscellaneous state and local sources, are projected to be approximately \$8.5 million at build out in (FY 2015).

Revenue increases, however, would not be sufficient to offset projected closure deficits. By build out, revenue shortfalls (including the effects associated with base closure) would still be approximately \$300,000. This is due principally to the loss of P.L. 81-874 funds that are not replaced with state source revenue or entered into state revenue limit calculations. These shortfalls would represent less than 0.2 percent of the district's operating budget.

These results assume Proposition 98 funding guarantees remain in effect at current levels. A reduction in the cost-of-living adjustments previously estimated for the district and/or reduced revenue availability at the state level would result in lower state revenue apportionments and increased shortfalls. Additional revenue sources and/or service cutbacks would be required to offset the projected shortfall.

### **City of Redlands**

Analysis of the projected fiscal effects of the alternative indicates a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general and special revenue fund revenues are projected at approximately \$1.4 million by build out. Increased sales and use taxes and intergovernmental transfers are the principal revenue sources affected. Expenditure demands on the city are projected at only \$300,000 at build out. These increases are due principally to the service demands associated with new city residents. The projected increase in net revenues will more than offset projected closure deficits estimated

over the FY 1997 to 2015 period. Minor shortfalls are projected during the early years of project development (FY 1995 to 1997).

#### **Redlands Unified School District**

Net fiscal effects of the alternative would represent a positive change compared to the post-closure scenario. Local property taxes and state revenue limit apportionments are the district's primary sources of revenue. The district also receives other state, local, and federal revenues. Based on revenue source limits of approximately \$3,230 per pupil at build out, total revenue limit source revenue is projected to increase by about \$3.3 million by build out. Because the base is not located within district boundaries and would have no effect on the tax base of the district, this increase will principally be due to increases in the state apportionments (assuming entitlements are fully funded at the state level). Total revenue increases are estimated to be approximately \$3.9 million by FY 2015. Revenue increases, however, would not be sufficient to offset projected closure deficits. Deficits of approximately \$100,000 (beginning in FY 1995) are projected over the FY 1995 to 2015 period. Additional revenue sources and/or service cutbacks would be required to offset the projected shortfalls.

#### **City of Highland**

Fiscal effects of the alternative indicate a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general fund revenues are projected at approximately \$400,000 by build out. The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure demands on the city are projected at \$100,000 at build out (FY 2015). These increases are due principally to the service demands associated with new city residents. The projected increase in net revenues will more than offset projected closure deficits estimated by FY 2004. However, these increases would not be sufficient to offset projected closure deficits during the early years of project development (FY 1995 to 2003). Deficits of approximately \$100,000 (beginning in FY 1995) are projected. These shortfalls would require some response by the city through service cutbacks and/or increases in tax and non-tax revenue schedules.

#### **City of Loma Linda**

Fiscal effects of the alternative indicate a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general fund revenues are projected at approximately \$500,000 by build out (FY 2015). The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure demands on the city are projected at \$100,000 at build out. These increases are due principally to the service demands associated with new city residents. The

projected increase in net revenues will more than offset projected closure deficits estimated by FY 2003. However, these increases would not be sufficient to offset projected closure deficits during the early years of project development (FY 1995 to 2002). Deficits of approximately \$100,000 beginning in FY 1995 are projected. These shortfalls would require some response by the city through service cutbacks and/or increases in tax and non-tax revenue schedules.

#### **City of Colton**

Fiscal effects of the alternative indicate a net positive effect when compared to the post-closure scenario (base closed and under caretaker status). Increased general fund revenues are projected at approximately \$700,000 by build out. The principal revenue sources affected would be sales and use taxes and intergovernmental transfers. Expenditure demands on the city are projected at \$100,000 at build out. These increases are due principally to the service demands associated with new city residents. The projected increase in net revenues will more than offset projected closure deficits estimated by build out. However, these increases would not be sufficient to offset projected closure deficits during the early years of project development (FY 1995 to 1997). Deficits of approximately \$100,000 beginning in FY 1995 are projected.

#### **4.5.5 No-Action Alternative**

Under the No-Action Alternative, the U.S. Government would retain ownership of the Norton AFB property. A DMT would maintain the facilities and grounds. Public finance impacts for the No-Action Alternative would be those described for closure in Section 3.4.5.

### **4.6 OTHER RELEVANT RESOURCES**

#### **4.6.1 Transportation**

If no reuse of Norton AFB occurs, key local roads would experience a net reduction in traffic volume, which would lead to acceptable operating conditions (in general, LOS C or better) throughout the analysis period. Key regional roads would continue to operate at unacceptable LOS E or worse, particularly on I-10 and I-215. The currently congested areas in the vicinity of Waterman and Tippecanoe interchanges would probably deteriorate further. On-base roads would experience LOS A.

With reuse of Norton AFB, most key regional roads would continue to operate at unacceptable LOS E or worse throughout the analysis period.

The critical intersections along Tippecanoe Avenue with existing high daily traffic volumes would operate in excess of capacity by the year 2015.

AD-A281 281

SOCIOECONOMIC IMPACT ANALYSIS STUDY DISPOSAL AND REUSE  
OF NORTON AIR FORCE BASE CALIFORNIA(U) DEPARTMENT OF  
THE AIR FORCE WASHINGTON DC JUN 93 XC-USAF

3/3

UNCLASSIFIED

NL

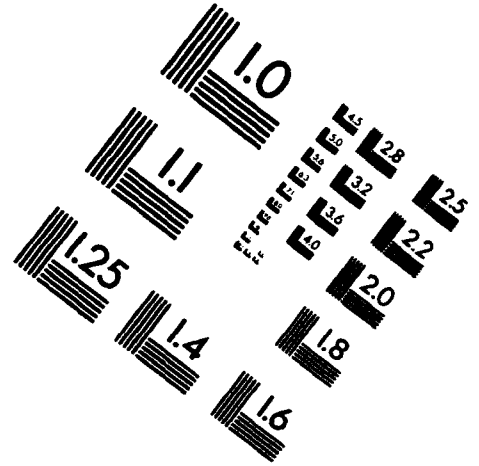
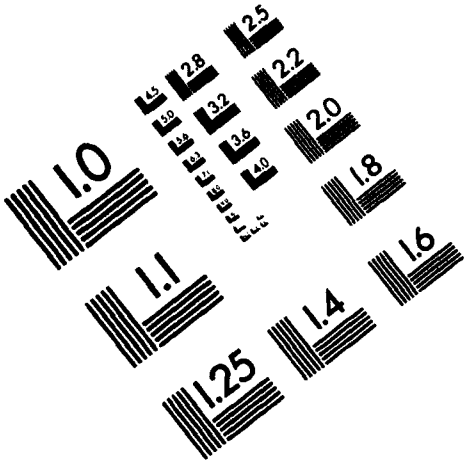
END  
FILMED  
FBI  
DTIC



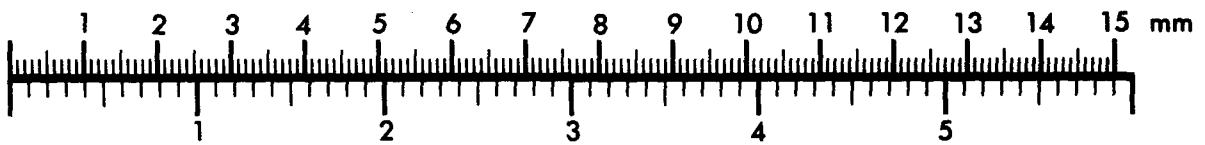
**AIIM**

**Association for Information and Image Management**

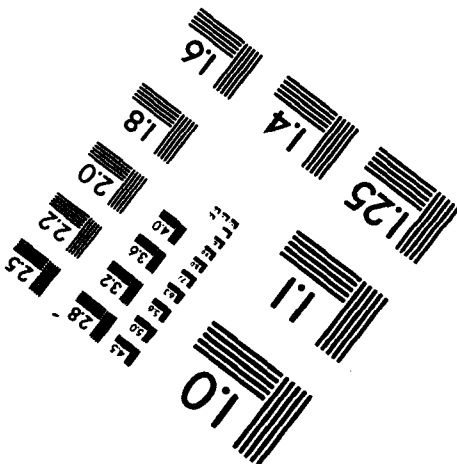
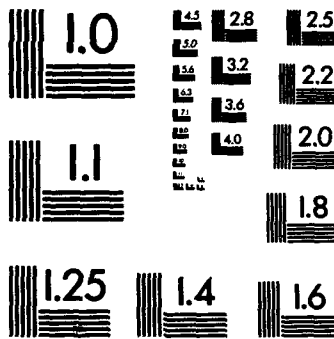
1100 Wayne Avenue, Suite 1100  
Silver Spring, Maryland 20910  
301/587-8202



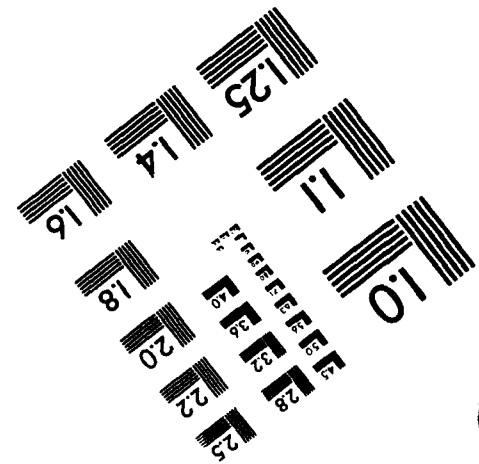
**Centimeter**



**Inches**



MANUFACTURED TO AIIM STANDARDS  
BY APPLIED IMAGE, INC.



145

Other critical intersections along Third Street would operate near capacity. The intersection at Waterman Avenue and Hospitality Lane would continue to operate above capacity due to existing heavy traffic volumes.

Under all reuse alternatives, Fifth Street (between Del Rosa and Victoria) would deteriorate to LOS F during the period 2001 to 2006; also Mill Street (between Tippecanoe and Waterman) would deteriorate to LOS F during the period 2006 to 2015. Under the Proposed Action and the Non-Aviation Alternative, Alabama Street between Palmetto Avenue and Third Street, would deteriorate to level F during the period 2008 and 2013. Intersections on key roads are likely to exhibit congestion problems as well. Improvements to Fifth and Mill streets would be required under the Proposed Action and the three reuse alternatives between 2001 and 2015 to maintain an acceptable LOS. Similarly, improvements to Alabama Street would be required under the Proposed Action and the Non-Aviation Alternative between 2008 and 2013.

Under all reuse alternatives, existing and new on-base main roads would experience heavy traffic volumes. Thus, a well designed internal circulation system must be implemented for each reuse alternative in order to accommodate the order of movement and to provide an adequate transition with the public street system.

The effects of the Proposed Action and alternatives on each component of the transportation system are presented in this section. Potential mitigation measures are suggested for those components likely to experience substantial and adverse impacts under any or all of these alternatives.

For the purpose of this analysis, the key local roads are identified as follows: Third, Fifth, and Mill streets in the east-west direction, and Tippecanoe Avenue (south of the base), Del Rosa Drive, Victoria Avenue, and Alabama/Palm Avenue in the north-south direction. Other roadways such as Sterling, Tippecanoe (north of the base), Rialto, Central, San Bernardino, and Waterman avenues and Redlands Boulevard were identified as complementary roadways. Key regional roads likely to be most affected by the redevelopment on site would be I-10, I-215, and SR-30. The key on-base roads, in general, consist of a new transition corridor through the base connecting Tippecanoe Avenue to Del Rosa Drive, and proposed feeders connecting to it and coinciding with existing on-base roads.

Under all reuse alternatives, no adjustment was made for possible trip reductions resulting from Transportation Demand Management/ Transportation System Management (TDM/TSM) such as ride sharing, telecommuting, transit, signal coordination, and others. The implementation of efficient TDM could reduce vehicle trips by a maximum of 15 to 20 percent.

#### 4.6.1.1 Proposed Action

**Roadways.** Traffic generation for a variety of land uses has been analyzed for the Proposed Action. The major traffic generators are the 30,300 projected employees, and approximately 1,300,000 air passengers. At build out, it is estimated that about 97,400 vehicle trip ends (VTE) would be generated by the Proposed Action on a typical weekday. Based on the proposed absorption schedule, the increase of trips generated by the on-site development is depicted in Table 4.6-1. The amount of trips generated by the Proposed Action would increase steadily, with the greatest change in the volume of project-related trips occurring during the period 2000 to 2005 when traffic would increase by a factor of 2.5 in 5 years.

**Table 4.6-1. Average Daily Trip Generation**

	2000	2005	2015
Proposed Action	32,421	78,331	97,357
Airport with Mixed Use	38,551	69,364	83,621
Aircraft Maintenance Center	34,351	59,537	63,959
Non-Aviation	61,281	88,625	118,433

Under the Proposed Action, a new transition corridor through the base connecting Tippecanoe Avenue to Del Rosa Drive is planned. Local streets within the base ultimately would be upgraded in accordance with an approved Specific Plan for the OIP. The trip distribution to/from the site is assumed as follows: 30 percent of trips generated on base would use Gate 1, 50 percent would use Gate 4, and 20 percent would use Victoria Avenue, which is likely to become the main ground access to the proposed Norton airport.

By 2015, the Proposed Action would add 9,700 daily vehicles to I-10 at the Tippecanoe interchange and 5,800 daily vehicles to SR-30 at Del Rosa Drive; these volumes represent 3.6 and 6.4 percent, respectively, of total daily traffic at each location. Even without the project, the LOS on I-10 and I-215 would deteriorate to level F due to cumulative impacts of development projects in the vicinity of Norton AFB.

Under the Proposed Action, improvements to Fifth, Mill, and Alabama streets would be required to prevent deterioration to LOS F. Fifth Street would need to be widened to four through lanes between Del Rosa Drive and Victoria Avenue by 2003. This would include widening the two-lane bridge over City Creek near SR-30 to four lanes. Alabama Street would also need to be widened to four through lanes between Palmetto Avenue and Third Street by 2013. In addition, Mill Street is expected to be widened to



four through lanes between Waterman and Tippecanoe avenues. This would be required to be completed by 2006 to avoid deterioration to LOS F. Other key local roads would operate at LOS D or better during the planning period.

By 2015, most intersections along Tippecanoe Avenue/Anderson Avenue between Mill Street and Redlands Boulevard, particularly at Rosewood Avenue and Redlands Boulevard, would operate in excess of capacity. The intersection of Waterman Avenue/Hospitality Lane, without improvement, would continue to operate in excess of capacity. The intersection of Waterman Avenue/Redlands Boulevard would operate near or in excess of capacity.

Existing on-base roads would be used in the short term during the construction period, but ultimately the entire on-base network would be upgraded and reconstructed to accommodate new land uses. Without upgrading, the on-base road network would likely operate at LOS F and would provide inadequate accessibility. By 2015, the transition corridor through the base connecting Tippecanoe Avenue/Del Rosa Drive would experience the heaviest traffic volumes, potentially in the range of 18,000 to 25,000 daily trips.

The Proposed Action is expected to increase the demand on public transportation in proportion to increases in regional population; however, there will be no significant impact on the public transportation infrastructure.

The Proposed Action includes roadway improvements to facilitate movement of goods by truck to on-site land uses.

**Air Transportation.** The commercial airport identified under the Proposed Action would have a long-term (year 2015) passenger volume of approximately 1.3 MAP. This passenger volume represents approximately 24 percent of the 1990 passenger traffic through Ontario International Airport (5.4 MAP), and 11 percent of the long-term projected traffic at Ontario (12 MAP).

SCAG recently completed forecasts of air passenger demand in southern California for the years 2000 and 2010 (SCAG, 1991). Regional total air passenger demand was projected at 118 MAP in the year 2010, well in excess of the 63 MAP constrained capacity of current regional airports. The Proposed Action could satisfy a portion of this unmet demand. Other regional airports would continue to operate at or above capacity. Air cargo shipments through the commercial airport under the Proposed Action can be expected to help meet the growing demand for air freight capacity projected by SCAG through the year 2010 (SCAG, 1991). An appreciable reduction

of vehicle miles on freeways would result from the decreased trip lengths to and from the Norton area and the Ontario airport.

Operators of private airports indicated that the existing private airports in the ROI would probably not experience major losses of patronage with the introduction of general aviation at Norton AFB.

**Railroad Transportation.** In spite of the introduction of industrial and commercial uses at Norton AFB, it is unlikely that rail freight can compete with trucks due to the relatively small amount of freight and the wide range of originations/destinations. In turn, the air cargo forecasts at Norton airport for 2015 would amount to 56 tons enplaned daily, which is not large enough to justify a rail link by the year 2015. The rail link formerly connecting to the base near Gate 1 could, if rebuilt, be used during heavy construction periods to bring in construction materials.

Ridership on the AMTRAK system in and out of San Bernardino is expected to increase in proportion to population increases in the area. Approximately 5,100 AMTRAK riders of the projected 2015 total (68,900) are attributable to the population impacts of the Proposed Action.

#### **4.6.1.2 Airport with Mixed Use Alternative**

**Roadways.** The total daily trips generated by the Airport with Mixed Use Alternative are estimated at 83,600 (see Table 4.6-1). The major traffic generators under this reuse plan are employees of industrial and commercial activities, passengers, and new residents.

Under the Airport with Mixed Use Alternative, trip distribution to and from the base area is assumed to be as follows: 10 percent of total trips would be internal (by residents working and shopping on site), 30 percent of trips would use Gate 1, 40 percent would use Gate 4, and 20 percent would use Victoria Avenue access. Approximately 40 percent of the total generated trips are assumed to use regional roads.

By 2015, the Airport with Mixed Use Alternative would add 8,400 daily vehicles to I-10 at the Tippecanoe interchange and about 5,000 vehicles per day to SR-30 at Del Rosa Drive; these volumes represent 3 and 5.5 percent, respectively, of total traffic at each location. Even without the project, the LOS on I-10 and I-215 would continue to deteriorate to level F due to cumulative impacts of development projects in the vicinity of Norton AFB.

Under the Airport with Mixed Use Alternative, improvements would be required to Mill and Fifth streets, including widening the bridge over City Creek, to preclude LOS from decreasing to F. Provided Fifth Street is widened to four lanes between Del Rosa Drive and Victoria Avenue in 2006, it would operate at LOS B. Similarly, if Mill Street is widened to four lanes

between Waterman and Tippecanoe avenues by 2011, it would operate at LOS A. All other key roads, without improvements, would operate at LOS D or better in 2015.

By 2015, most intersections along Tippecanoe Avenue/Anderson Avenue between Mill Street and Redlands Boulevard (particularly at Rosewood Avenue and Redlands Boulevard) would operate in excess of capacity. The intersections at Waterman Avenue/Hospitality Lane, without improvement, would continue to operate in excess of capacity; the intersection of Waterman Avenue/Redlands Boulevard would operate near or in excess of capacity.

Existing on-base roads would be used in the short term and during construction. Ultimately some of the on-base network would be widened or upgraded to accommodate new land uses. Without improvements on-base roads would likely operate at LOS F by 2015, and would provide inadequate accessibility.

By 2015, the transition corridor through the base connecting Tippecanoe Avenue to Del Rosa Drive would experience traffic volumes in the range of 19,000 to 21,000 trips per day.

The Airport with Mixed Use Alternative is expected to increase demand on public transportation in proportion to population increases in the region; however, there will be no significant impact on the public transportation system.

This alternative involves retention of much of the existing on-base roadways, which present constraints to heavy truck movement. Improvements to intersections would be incorporated to improve turning radii and improve truck circulation.

**Air Transportation.** The impacts on air transportation for the Airport with Mixed Use Alternative would be similar to those described in Section 4.6.1.1 for the Proposed Action.

**Railroad Transportation.** The impacts on rail transportation for the Airport with Mixed Use Alternative would be less than those described for the Proposed Action. Approximately 4,400 annual AMTRAK riders of the projected 2015 total (68,200) would be attributable to the population impacts of the Airport with Mixed Use Alternative.

#### **4.6.1.3 Aircraft Maintenance Center Alternative**

**Roadways.** The major traffic generators are the employees and new residents. When the base is fully redeveloped, it is estimated that about 64,000 daily VTEs would be generated by the Aircraft Maintenance Center

**Alternative.** The increase of trips generated by the on-site development is depicted in Table 4.6-1.

Under the Aircraft Maintenance Center Alternative, the trip generation to and from the site is assumed to be as follows: 10 percent internal trips, 32 percent using Gate 1, 58 percent using Gate 4. Truck traffic generated by the aggregate mining activities would use Victoria Avenue. Approximately 36 percent of trips would use key regional roads.

By 2015, the Aircraft Maintenance Center Alternative would add about 8,400 daily vehicles to I-10 at Tippecanoe interchange and about 5,000 daily vehicles to SR-30 at Del Rosa Drive. These volumes represent 3.1 and 5.5 percent, respectively, of each location's total projected daily traffic. The projected aggregate mining activities would ultimately add an average of 250 truck trips per day to I-10, which represents slightly less than 1 percent increase in truck traffic on I-10 between SR-30 and I-215. Even without the project, the LOS on I-10 and I-215 would deteriorate to level F due to cumulative impacts of development projects in the vicinity of Norton AFB.

Under the Aircraft Maintenance Center Alternative, improvements would be required to segments of Fifth and Mill streets by 2005 and 2015, respectively, including widening the bridge over City Creek, to preclude LOS from decreasing to level F. With these assumed improvements, all local roads would maintain LOS C or better through the year 2015, except Alabama Street between Palmetto Avenue and Third Street, which would operate at LOS E by 2015.

By 2015, most intersections along Tippecanoe Avenue/Anderson Avenue between Mill Street and Redlands Boulevard, particularly at Rosewood Avenue and Redlands Boulevard, would operate in excess of capacity. The intersection at Waterman Avenue/Hospitality Lane, without improvement, would continue to operate in excess of capacity. The intersection at Waterman Avenue/Redlands Boulevard would also continue to operate in excess of capacity.

Existing on-base roads would be used in the short term during the construction period. Ultimately, some on-base network would be widened or upgraded to accommodate new land uses. Without upgrading, the on-base road network would likely operate at LOS F and would provide inadequate accessibility.

By 2015, the transition corridor through the base connecting Tippecanoe Avenue to Del Rosa Drive would experience traffic volumes in the range of 14,000 to 20,000 daily trips. The access to the mining area would carry 500 vehicles per day of which 300 are heavy trucks.

The Aircraft Maintenance Center Alternative is expected to increase demand on public transportation in proportion to population increases in the region; however, there will be no significant impact on the public transportation system.

This alternative would be similar to the Airport with Mixed Use Alternative for the western part of the base. Heavy truck traffic would be associated with aggregate mining on the east side of the base. On-base roads would be designed to accommodate this traffic. Off-base roads that would be used by aggregate transport vehicles have the basic design capability to accommodate these vehicles; however, adequate turning radii and pavement reinforcement may be required.

**Air Transportation.** The implementation of the Aircraft Maintenance Center Alternative would provide general aviation operations, aircraft maintenance, and air cargo services, but no commercial air passenger services. The existing private airports in the ROI would probably not experience a loss of patronage with the introduction of general aviation at Norton AFB as part of this alternative. The use of Ontario International Airport for commercial aviation is expected to increase slightly in relation to population growth in the area.

**Railroad Transportation.** The impacts on rail freight transportation for the Aircraft Maintenance Center would be less than those described for the Proposed Action. Approximately 4,600 annual AMTRAK riders of the projected 2015 total (68,400) would be attributable to the population impacts of the Aircraft Maintenance Center Alternative.

#### **4.6.1.4 Non-Aviation Alternative**

**Roadways.** The total daily trips generated by the Non-Aviation Alternative are estimated at 118,400 (see Table 4.6-1). The major traffic generators under this alternative are the new residents and employees of industrial and commercial activities.

Accounting for the large residential element, the trip distribution pattern to and from the site is assumed as follows: 15 percent of total daily trips would be internal trips (generated mainly by residents working and shopping on-site), 25 percent of trips would use Gate 1, 30 percent would use Gate 4, 15 percent would use the access at Victoria Avenue, and 15 percent would use a new access at Alabama Street. The trip assignment to local streets is the same as for the Proposed Action. Approximately 34 percent of the total daily trips generated are assumed to use the regional system.

By 2015, the Non-Aviation Alternative would add about 9,500 daily vehicles to I-10 at the Tippecanoe Avenue interchange, which is 3.5 percent of total daily traffic at that location. The project would also add about 7,100 daily

vehicles to SR-30 at Del Rosa Drive or about 7.7 percent of total traffic. Even without base reuse, the LOS at some interchanges would decrease to level F.

Under the Non-Aviation Alternative, improvements to Fifth, Alabama, and Mill streets would be required in 2003, 2008, and 2009, respectively, to prevent deterioration to LOS F. With these assumed improvements, all local key roads would maintain LOS D or better through 2015.

By 2015, the performance of critical intersections is similar to the Airport with Mixed Use Alternative.

As with the Proposed Action and Airport with Mixed Use Alternative, on-base roads would be used in the short term and during the construction period. Without upgrading, the on-base road network would likely operate at LOS F and would provide inadequate accessibility.

By 2015, the Tippecanoe-Del Rosa corridor would carry approximately 30,000 daily vehicles. The Sterling Avenue extension would carry 15,000 daily vehicles.

The Non-Aviation Alternative can be expected to increase demand for public transportation in proportion to residential population increases. However, there will be no significant impact on the public transportation system.

This alternative would have similar impacts on movement of goods as the Airport with Mixed Use Alternative.

**Air Transportation.** The implementation of the Non-Aviation Alternative would provide no commercial air passenger/air cargo or general aviation services to meet projected regional demands. The use of Ontario International Airport for commercial and general aviation is expected to increase in direct relation to the overall population growth in the ROI.

**Railroad Transportation.** Ridership on the AMTRAK system through San Bernardino is expected to increase in relation to population growth in the area. Approximately 4,600 annual AMTRAK riders of the projected 2015 total (68,400) would be attributable to the population impacts of the Non-Aviation Alternative. The alternative would have little impact on rail freight.

**4.6.1.5 No-Action Alternative.** Transportation impacts under the No-Action Alternative would be those described for closure in Section 3.4.6.1.

#### **4.6.2 Utilities**

Changes in land use associated with the Proposed Action and alternatives likely would create the need for changes in the existing distribution and

collection systems at Norton AFB, including modifications to on-base water pumping and treatment facilities, wastewater collection systems, service providers for solid waste disposal, and distribution systems for electricity and natural gas. The water/steam heating system would not be used in any of the reuse alternatives due to its poor condition. New or extended utility corridors likely would be required, and new metered service entrances may be needed on existing facilities. The Proposed Action and reuse alternatives represent various potential future site development scenarios that could require somewhat extensive utility infrastructure changes, although specific plans for such improvements do not yet exist.

This study attempts to characterize the type of utility demand and subsequent infrastructure changes that would be required under each reuse alternative. Extensive changes in the on-base utility infrastructure systems would be subject to environmental review under the California Environmental Quality Act (CEQA). It also was assumed that the specific infrastructural improvements needed and the associated costs of such improvements would be borne directly or indirectly by the future site developer(s).

**4.6.2.1 Proposed Action.** A summary of utility demand changes associated with the Proposed Action is shown in Table 4.6-2. In the short term, under the Proposed Action, the increase in utility demand would be less than 1.4 percent of the demand projected under post-closure conditions. By 2015, the overall increase in utility demand from this alternative would range from 1.0 to 4.7 percent above projected post-closure conditions.

The increased population and resulting increase in utility demand from the Proposed Action would require the various utility purveyors to make long-term infrastructural improvements ahead of scheduled plans, in order to meet the utility demands created by the proposed land uses over the next two decades. Electric and gas service interruptions are not anticipated as a result of the Proposed Action.

**4.6.2.2 Airport with Mixed Use Alternative.** A summary of utility demand changes associated with the Airport with Mixed Use Alternative is shown in Table 4.6-3. Short-term increases in utility demand, through 2000, would remain below 1.8 percent of the demand projected under post-closure conditions for this alternative. Long-term increases in utility demand from this reuse alternative would rise up to 3.5 percent over post-closure conditions by 2015.

Changes to utility purveyors' short- and long-term plans would be different from their current plans. Utility demand rates related to this reuse alternative are slightly greater than those projected by each purveyor.

**Table 4.6-2. Utility Demand Changes in the ROI - Proposed Action**

	2000	2005	2015
<b>Water Consumption (in MGD)</b>			
Post-Closure Projection	93.2	101.6	113.1
Proposed Action	94.2	104.3	118.1
Change from Post-Closure Projection	1.0	2.7	5.0
Percent Change	1.1	2.7	4.4
<b>Wastewater Treatment (in MGD)</b>			
Post-Closure Projection	46.7	54.8	71.2
Proposed Action	47.3	56.5	74.4
Change from Post-Closure Projection	0.6	1.7	3.2
Percent Change	1.3	3.1	4.5
<b>Solid Waste Disposal (in millions of cubic yards/year)</b>			
Post-Closure Projection	3.77	4.35	5.52
Proposed Action	3.79	4.41	5.65
Change from Post-Closure Projection	0.02	0.06	0.13
Percent Change	0.5	1.4	2.4
<b>Electricity Consumption (in MWH/day)</b>			
Post-Closure Projection	7,234	7,995	9,783
Proposed Action	7,325	8,246	10,239
Change from Post-Closure Projection	91	251	456
Percent Change	1.3	3.1	4.7
<b>Natural Gas Consumption (in thousands of therms/day)</b>			
Post-Closure Projection	2,094	2,409	3,038
Proposed Action	2,100	2,425	3,067
Change from Post-Closure Projection	6	16	29
Percent Change	0.3	0.7	1.0

**Note:** Due to rounding, values in the table may not be verified by addition or simple calculation.

**Sources:** Projections based on Burns, 1991; California Energy Commission, 1990; City of San Bernardino Water Department, 1987; San Bernardino County Solid Waste Management, 1991; San Bernardino Valley Municipal Water District, 1990.



**Table 4.6-3. Utility Demand Changes in the ROI - Airport with Mixed Use Alternative**

	2000	2005	2015
<b>Water Consumption (in MGD)</b>			
Post-Closure Projection	93.2	101.6	113.1
Airport with Mixed Use Alternative	94.5	104.1	116.9
Change from Post-Closure Projection	1.3	2.5	3.8
Percent Change	1.4	2.5	3.4
<b>Wastewater Treatment (in MGD)</b>			
Post-Closure Projection	46.7	54.8	71.2
Airport with Mixed Use Alternative	47.5	56.4	73.6
Change from Post-Closure Projection	0.8	1.6	2.4
Percent Change	1.7	2.9	3.4
<b>Solid Waste Disposal (in millions of cubic yards/year)</b>			
Post-Closure Projection	3.77	4.35	5.52
Airport with Mixed Use Alternative	3.79	4.40	5.60
Change from Post-Closure Projection	0.02	0.05	0.08
Percent Change	0.5	1.1	1.4
<b>Electricity Consumption (in MWH/day)</b>			
Post-Closure Projection	7,234	7,995	9,783
Airport with Mixed Use Alternative	7,355	8,232	10,129
Change from Post-Closure Projection	121	237	346
Percent Change	1.7	3.0	3.5
<b>Natural Gas Consumption (in thousands of therms/day)</b>			
Post-Closure Projection	2,094	2,409	3,038
Airport with Mixed Use Alternative	2,102	2,424	3,060
Change from Post-Closure Projection	8	15	22
Percent Change	0.4	0.6	0.7

**Note:** Due to rounding, values in the table may not be verified by addition or simple calculation.

**Sources:** Projections based on Burns, 1991; California Energy Commission, 1990; City of San Bernardino Water Department, 1987; San Bernardino County Solid Waste Management 1991; San Bernardino Valley Municipal Water District, 1990.

Infrastructural improvements may be needed ahead of schedule in meeting these demands. However, service interruptions to electric and gas customers are not anticipated under this alternative.

**4.6.2.3 Aircraft Maintenance Center Alternative.** Short-term increases in utility demand, through 2000, would remain below 1.8 percent of the demand projected under post-closure conditions for this alternative (Table 4.6-4). Long-term increases in utility demand from the Aircraft Maintenance Center Alternative would rise to 2.8 percent over post-closure conditions in 2015.

Changes to utility purveyors' short- and long-term plans would differ from their current plans. Utility demand rates related to this reuse alternative are slightly greater than those projected by each purveyor. Infrastructural improvements may be needed ahead of schedule to meet these demands. Interruption of gas and electric service, however, is not expected under this alternative.

**4.6.2.4 Non-Aviation Alternative.** Both short- and long-term increases in utility demand associated with the Non-Aviation Alternative are slightly greater than the projections of the utility purveyors. Infrastructural improvements may need to be made by the individual purveyors ahead of their planned schedules. Customers would not be expected to experience any interruptions as a result of this alternative.

Short-term increases would be less than 1.6 percent of the demand projected under post-closure conditions. By 2015, the demand would increase up to 3.9 percent over post-closure conditions (Table 4.6-5).

**4.6.2.5 No-Action Alternative.** Utility impacts under the No-Action Alternative would be those described for closure in Section 3.4.6.2.

#### **4.6.3 Airspace**

This section addresses the potential for conflicts and competition among airspace users in the vicinity of Norton AFB under each of the reuse scenarios. The post-closure conditions assume that the base is placed in caretaker status without any reuse activity throughout the 20-year study period. Benefits associated with this caretaker status, as described for closure in Section 3.4.6.3, would continue through 2015, as follows:

- Absence of aviation uses at Norton AFB would have a beneficial impact on the efficiency of airspace use associated with Ontario International Airport.

**Table 4.6-4. Utility Demand Changes in the ROI - Aircraft Maintenance Center Alternative**

	2000	2005	2015
<b>Water Consumption (in MGD)</b>			
Post-Closure Projection	93.2	101.6	113.1
Aircraft Maintenance Center Alternative	94.5	103.9	116.1
Change from Post-Closure Projection	1.3	2.3	3.0
Percent Change	1.4	2.3	2.7
<b>Wastewater Treatment (in MGD)</b>			
Post-Closure Projection	46.7	54.8	71.2
Aircraft Maintenance Center Alternative	47.5	56.3	73.1
Change from Post-Closure Projection	0.8	1.5	1.9
Percent Change	1.7	2.7	2.7
<b>Solid Waste Disposal (in millions of cubic yards/year)</b>			
Post-Closure Projection	3.77	4.35	5.52
Aircraft Maintenance Center Alternative	3.79	4.40	5.59
Change from Post-Closure Projection	0.02	0.05	0.07
Percent Change	0.5	1.1	1.3
<b>Electricity Consumption (in MWH/day)</b>			
Post-Closure Projection	7,234	7,995	9,783
Aircraft Maintenance Center Alternative	7,350	8,208	10,059
Change from Post-Closure Projection	116	213	276
Percent Change	1.6	2.7	2.8
<b>Natural Gas Consumption (in thousands of therms/day)</b>			
Post-Closure Projection	2,094	2,409	3,038
Aircraft Maintenance Center Alternative	2,102	2,422	3,056
Change from Post-Closure Projection	8	13	18
Percent Change	0.4	0.5	0.6

**Note:** Due to rounding, values in the table may not be verified by addition or simple calculation.

**Sources:** Projections based on Burns, 1991; California Energy Commission, 1990; City of San Bernardino Water Department, 1987; San Bernardino County Solid Waste Management, 1991; San Bernardino Valley Municipal Water District, 1990.

**Table 4.6-5. Utility Demand Changes in the ROI - Non-Aviation Alternative**

	2000	2005	2015
<b>Water Consumption (in MGD)</b>			
Post-Closure Projection	93.2	101.6	113.1
Non-Aviation Alternative	94.4	103.7	117.3
Change from Post-Closure Projection	1.2	2.1	4.2
Percent Change	1.3	2.1	3.7
<b>Wastewater Treatment (in MGD)</b>			
Post-Closure Projection	46.7	54.8	71.2
Non-Aviation Alternative	47.4	56.1	73.9
Change from Post-Closure Projection	0.7	1.3	2.7
Percent Change	1.5	2.4	3.8
<b>Solid Waste Disposal (in millions of cubic yards/year)</b>			
Post-Closure Projection	3.77	4.35	5.52
Non-Aviation Alternative	3.79	4.39	5.61
Change from Post-Closure Projection	0.02	0.04	0.09
Percent Change	0.5	0.9	1.6
<b>Electricity Consumption (in MWH/day)</b>			
Post-Closure Projection	7,234	7,995	9,783
Non-Aviation Alternative	7,338	8,186	10,164
Change from Post-Closure Projection	104	191	381
Percent Change	1.4	2.4	3.9
<b>Natural Gas Consumption (in thousands therms/day)</b>			
Post-Closure Projection	2,094	2,409	3,038
Non-Aviation Alternative	2,100	2,421	3,062
Change from Post-Closure Projection	6	12	24
Percent Change	0.3	0.5	0.8

**Note:** Due to rounding, values in the table may not be verified by addition or simple calculation.

**Sources:** Projection based on Burns, 1991; California Energy Commission, 1990; City of San Bernardino Water Department, 1987; San Bernardino County Solid Waste Management, 1991; San Bernardino Valley Municipal Water District, 1990.

- Caretaker status of Norton AFB would not affect operating restrictions, management procedures, and efficiency of March AFB airspace use.
- A closed airfield under caretaker status would ease airspace communications and regulatory requirements for aircraft operating at public and private airports near Norton AFB.
- Land use and airspace requirements associated with airport operations would be eliminated or relaxed. Examples are the freedom to build in the former clear zone and use of the former airport and airspace for other industrial and recreational purposes.

Five standards of measure were applied to evaluate the Proposed Action and all alternatives (see Section 3.3.6):

1. Changes in operating restrictions, procedures, or regulations permissible at other facilities with non-aviation reuse of Norton AFB
2. Changes in operating restrictions, procedures, or regulation necessary to accommodate aviation reuses at Norton AFB
3. Possible competition with other commercial and general aviation activities
4. Cumulative impacts from aviation reuses of George AFB
5. Lost opportunities to non-aviation uses.

**4.6.3.1 Proposed Action.** Ontario International Airport's FAA representative reported that operating procedures would not require change under the Proposed Action (Fowler, 1991). However, changes may eventually be required to accommodate Norton AFB commercial airport traffic along with increases at Ontario.

Based on the available information, it does not appear that the type and level of aircraft operations identified for the Proposed Action would require any airspace realignments or system encroachment on other airspace areas or uses. Therefore, there would not be any added impacts on the Redlands, Riverside, and Rialto municipal airports.

Population growth would increase the demand for general aviation services that the smaller airports could meet. Hence, private airfield operators do not anticipate competition under the Proposed Action.

No cumulative airspace impacts to the Proposed Action at Norton AFB were identified as a result of closure and reuse of George AFB. The San

Bernardino Mountains separating the two bases also separate approach and departure rates. As a result, activity at George AFB and Norton AFB would not infringe on their respective airspace. No cumulative airspace impacts were identified from aircraft realignments at March AFB since baseline aircraft operations at March AFB are expected to decrease.

Airspace usage could affect certain developments within approach and departure areas, certain noise contour levels, and clear zone concerns. Some non-aviation uses would be prohibited or discouraged in the airport area (e.g., residential, commercial, and industrial structures that could present a safety hazard to air traffic). Also recreational uses like trap shooting and ballooning may not be permitted if they would interfere with aviation activities.

**4.6.3.2 Airport with Mixed Use Alternative.** Aviation activities under this alternative would be very similar to those projected under the Proposed Action. Impacts on other commercial, military, and general aviation airspace users would consequently be very similar to the impacts of the Proposed Action.

No cumulative impacts on the Airport with Mixed Use Alternative were identified from closure and reuse of George AFB. Airspace surrounding George AFB is controlled by the FAA at Edwards AFB and does not conflict with airspace use around Norton AFB, which is controlled by the FAA at Ontario International Airport. Airspace usage will affect certain developments within approach and departure areas, certain noise contour levels, and clear zone concerns.

**4.6.3.3 Aircraft Maintenance Center Alternative.** Aviation activities under this alternative would be restricted to general aviation and aircraft maintenance. Under this alternative, the control tower would remain operational and communications requirements for aircraft transiting through the Norton control zone (or ARSA, if retained) would still be required. Airspace use around Norton would be less congested under this alternative making transit somewhat easier for aircraft operations at Ontario International and Redlands Municipal airports.

Small airports in the vicinity are likely to experience increased competition for general aviation services, depending on fees charged at the new aircraft maintenance center. Operations at private airfields are not expected to be adversely affected.

No cumulative impacts on the Aircraft Maintenance Center Alternative were identified from closure and reuse of George AFB since airspace use for both bases does not overlap or conflict. Airspace usage will affect certain developments within approach and departure areas, certain noise contour levels, and clear zone concerns.

**4.6.3.4 Non-Aviation Alternative.** The use of Norton AFB for non-aviation purposes could have a beneficial effect on air traffic and airspace use in the ROI by eliminating the source of potential congestion in the overlapping airspace used for simultaneous Norton/Ontario arrivals. Airspace impacts of this alternative are expected to be similar to the post-closure conditions described in the introduction to this section because no aviation reuse activities would occur.

**4.6.3.5 No-Action Alternative.** Base closure and termination of flying activities at Norton AFB would provide greater ease for aircraft operating to or from the Redlands Municipal Airport and more airspace would be available for maneuvering aircraft into the traffic pattern for the Norton/C sector. Airspace impacts of the No-Action Alternative would be those described for closure in Section 3.4.6.3.

#### **4.7 OTHER LAND USE CONCEPTS**

This section performs an in-depth analysis only for those reuse options that, as a whole, provide an integrated plan for future site redevelopment. The land use concepts described in Section 1.4.6 could occur in part or as a whole and would, therefore, selectively enhance or detract from site redevelopment. A descriptive treatment of these potential effects is presented in this section (and summarized in Table 4.7-1).

All of these independent proposals would affect total on-site employment. The most extreme is the U.S. Department of the Interior proposal implemented in conjunction with the Proposed Action, which would result in a net decrease of 2,992 on-site jobs. The VA proposal under the Proposed Action would reduce total on-site jobs by 1,021. In contrast, the U.S. Postal Service and Department of the Interior are the only independent proposals submitted that result in a net increase of on-site employment depending on the reuse alternative with which it is implemented. The U.S. Postal Service proposal under the Airport with Mixed Use, Aircraft Maintenance Center, and Non-Aviation alternatives results in a net increase of 369 jobs.

The U.S. departments of the Interior, Education, and Veterans Affairs, and Housing and Urban Development, and the San Bernardino County Work Furlough Program and the aggregate mining proposals would all reduce the amount of residential development. The most extreme in this regard is the aggregate mining proposal which, if implemented with the Non-Aviation alternative, would result in a net decrease of 1,350 dwelling units.

Compatibility issues could also surface by the juxtaposition of certain land uses with one another. The work furlough program, for instance, could negatively impact the demand for on-site housing. In addition, the suitability of the Education Department's proposal in the midst of a major airport is

questionable. On the other hand, the Department of the Interior's park proposal would positively impact recreational opportunities in the surrounding area.

As on-site employment (and thus earnings) are changed by these independent proposals, be it positively or negatively, local and regional secondary employment impacts of the various alternatives also would change. The degree to which these secondary effects are altered would depend on a number of factors, including the differences in non-payroll spending associated with independent proposals compared to displaced industrial or commercial endeavors, the differences in construction costs among the various land uses, and differences in the propensity to consume local goods and services by employees and occupants of the proposed facilities compared to those displaced.



Table 4.7-1. Socioeconomic Impacts of Other Land Use Concepts  
Page 1 of 3

Agency/Proposal	Employment/Population	Alternative	Change in Reuse Plan
U.S. Department of the Interior (sponsor)/ City and County Parks and Recreation	140 direct jobs.	Proposed Action	Reduced OIP, commercial, and aviation support development. Net decrease of 2,992 on-site jobs.
		Airport with Mixed Use	Reduced OIP, commercial, and aviation support development. Net decrease of 778 on-site jobs.
		Aircraft Maintenance Center	Reduced aggregate mining development. Net increase of 11 on-site jobs.
		Non-Aviation	Reduced residential development. Net decrease of 211 single-family units. Net increase of 24 on-site jobs.
U.S. Department of Agriculture/ Forest Service-west site	150 direct jobs.	Proposed Action	Reduced OIP and aviation support development. Net decrease of 629 on-site jobs.
		Airport with Mixed Use, Aircraft Maintenance Center	Reduced commercial and aviation support development. Net decrease of 368 on-site jobs.
		Non-Aviation	Reduced commercial development. Net decrease of 286 on-site jobs.
U.S. Department of Agriculture/ Forest Service-east site	150 direct jobs.	Proposed Action	Reduced commercial development. Net decrease of 1,234 on-site jobs. Severely limits area for general aviation.
		Airport with Mixed Use	Reduced aviation support development. Net decrease of 665 on-site jobs. Limits area for general aviation.

**Table 4.7-1. Socioeconomic Impacts of Other Land Use Concepts**  
**Page 2 of 3**

Agency/Proposal	Employment/Population	Alternative	Change in Reuse Plan
Department of Agriculture/Forest Service - east site (Cont'd)		Aircraft Maintenance Center  Non-Aviation	Limited airfield access. Reduced aggregate mining development. Site is divided into two parcels. Net increase of 145 on-site jobs.  Reduced residential development. Net decrease of 63 single-family units. Net increase of 150 on-site jobs.
U.S. Department of Agriculture/Forest Service - office and warehouse sites	150 direct jobs.	Proposed Action  Airport with Mixed Use, Aircraft Maintenance Center, Non-Aviation	Reduced OIP development. Net decrease of 140 on-site jobs.  Reduced OIP and warehousing development. Net decrease of 29 on-site jobs.
U.S. Department of Education (sponsor) State/Community Higher Education	250 direct jobs; Up to 1,000 students.	Proposed Action  Airport with Mixed use  Aircraft Maintenance Center, Non-Aviation	Reduced OIP and aviation support development. Net decrease of 40 on-site jobs.  Reduced residential and OIP development. Net decrease of 40 on-site jobs and 104 multi-family dwelling units.  Reduced residential and OIP development. Net decrease of 40 on-site jobs and 80 multi-family dwelling units.
U.S. Department of Veterans Affairs	140 direct jobs.	Proposed Action  Airport with Mixed Use	Reduced OIP development. Net decrease of 1,021 on-site jobs.  Reduced residential and OIP development. Net decrease of 87 on-site jobs and 104 multi-family dwelling units.

Table 4.7-1. Socioeconomic Impacts of Other Land Use Concepts  
Page 3 of 3

Agency/Proposal	Employment/Population	Alternative	Change in Reuse Plan
U.S. Department of Veterans Affairs (Cont'd)		Aircraft Maintenance Center, Non-Aviation	Reduced residential and OIP development. Net decrease of 87 on-site jobs and 160 multi-family dwelling units.
U.S. Postal Service	400 to 500 direct jobs.	Proposed Action	Reduced OIP development. Net decrease of 81 on-site jobs.
		Airport with Mixed Use, Aircraft Maintenance Center, Non-Aviation	Reduced warehousing development. Net increase of 369 on-site jobs.
McKinney Act/Homeless Housing	No direct jobs; housing of 70 homeless persons per building.	Proposed Action	Reduced OIP development. Net decrease of 140 on-site jobs per building.
		Airport with Mixed Use, Aircraft Maintenance Center, Non-Aviation	No change.
San Bernardino County/Work Furlough Program	25 direct jobs; 210 inmates.	Proposed Action, Airport with Mixed use, Aircraft Maintenance Center, Non-Aviation	Reduced OIP development. Net decrease of 265 on-site jobs.
Aggregate Mining	55 direct jobs.	Proposed Action, Airport with Mixed Use	Reduced airfield and aviation support development. Net decrease of 32 on-site jobs.
		Aircraft Maintenance Center Non-Aviation	No net effects Reduced residential and commercial development. Net decrease of 1,350 single-family units. Net decrease of 352 on-site jobs.

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **5.0 COMPARATIVE ANALYSIS OF PROPOSED ACTION AND ALTERNATIVES**

---

This chapter provides a comparison of the effects of the Proposed Action and alternative reuse plans on the key socioeconomic issue areas evaluated in this study (economic activity, population, housing, public services, public finance, transportation, utilities, and airspace). The Proposed Action and alternative reuse plans are as follows:

- Proposed Action, or Airport with OIP Alternative
- Airport with Mixed Use Alternative
- Aircraft Maintenance Center Alternative
- Non-Aviation Alternative.

Table 5.1-1 summarizes the comparative findings of this study for each issue area and each alternative. The table also displays findings for the No-Action Alternative to provide a benchmark for assessing the effects of a particular alternative relative to closure conditions.

### **5.1 ECONOMIC ACTIVITY**

For about the first 10 years following base closure, there would be only minor differences in the amount of economic stimulus provided to the Riverside-San Bernardino PMSA region and the five-city area (San Bernardino, Redlands, Highland, Loma Linda, and Colton) by each of the reuse alternatives considered in this analysis. Between 1995 and 2005, the total number of regional direct and secondary jobs created from construction and operation activities associated with each of the reuse alternatives would differ by about 7,700 jobs, with the Proposed Action providing the highest number of jobs during most of this period.

By 2005, the Proposed Action would begin to provide a greater stimulus to the regional and ACS economies, as the number of direct and secondary jobs associated with this reuse activity increases more rapidly than the other reuse alternatives. Earnings by direct and secondary workers would also increase proportionately with the number of jobs generated.

Total regional employment related to the Proposed Action would be more than 53,000 jobs by 2015, with annual earnings estimated at \$1.3 billion. Regional economic activity associated with the Aircraft Maintenance Center Alternative in 2015 would be about 65 percent of that of the Proposed Action or about 34,300 jobs and earnings of almost \$900 million. With an estimated 43,000 to 45,000 jobs and annual earnings at approximately \$1.1 billion, regional economic effects of the Airport with Mixed Use and

Table 5.1-1. Comparison of Reuse Alternatives<sup>1d</sup>  
Page 1 of 2

	No-Action (Residual Base Operations/Caretaker Status)	Change from No-Action Alternative			Non-Aviation Alternative
		Proposed Action	Airport with Mixed Use Alternative	Aircraft Maintenance Center Alternative	
<b>Economic Activity</b>					
Regional Employment <sup>1a</sup>	Less than 70 jobs.	More than 53,000 jobs.	Almost 43,000 jobs.	More than 34,000 jobs.	More than 45,000 jobs.
Regional Earnings (\$1990)	Less than \$2 million/year.	More than \$1.3 billion.	More than \$1.1 billion.	Almost \$900 million.	Almost \$1.1 billion.
Population	Zero site-related population.	More than 34,000 people.	About 26,000 people.	Almost 21,000 people.	Almost 29,000 people.
Housing	Zero site-related housing demand.	Almost 11,800 units.	About 9,030 units.	About 7,200 units.	Almost 9,900 units.
<b>Public Services</b>					
General Government, Police, and Fire					
San Bernardino County (total incorporated and unincorporated)	Minimal site-related demand for services.	More than 28,000 site-related persons served.	Almost 21,400 persons served.	More than 17,000 persons served.	Almost 23,500 persons served.
City of San Bernardino	Minimal site-related demand for services.	About 10,600 persons served.	Almost 8,050 persons served.	About 6,400 persons served.	Almost 8,900 persons served.
Education	Zero site-related enrollments.	More than 7,000 students in the ROI; 2,690 in San Bernardino City USD.	About 5,400 students in the ROI; 2,039 in San Bernardino City USD.	More than 4,300 students in the ROI; 1,624 in San Bernardino City USD.	More than 5,900 students in the ROI; 2,246 in San Bernardino City USD.
Health	Norton AFB Clinic remains closed.	None.	Civilian Clinic Open.	Civilian Clinic Open.	Civilian Clinic Open.
<b>Public Finance<sup>1d</sup></b>					
City of San Bernardino	Shortfalls to \$1.5 million/year.	Positive; shortfalls offset in all years.	Positive; shortfalls offset by FY 1998.	Positive; shortfalls offset by FY 1998.	Positive; shortfalls offset in all years.
San Bernardino City USD	Shortfalls to \$600,000/year.	Shortfalls to \$250,000 by FY 2015.	Shortfalls to \$300,000 by FY 2015.	Shortfalls to \$400,000 by FY 2015.	Shortfalls to \$300,000 by FY 2015.
City of Redlands	Shortfalls to \$700,000/year.	Positive; shortfalls offset by FY 1998.	Positive; shortfalls offset by FY 2002.	Positive; shortfalls offset by FY 2002.	Positive; shortfalls offset by FY 1997.
Redlands USD	Shortfalls to \$100,000/year.	Positive; shortfalls offset by FY 2012.	Shortfalls to \$20,000.	Shortfalls to \$60,000.	Shortfalls to \$20,000.

Notes: (a) All impacts presented in this table apply specifically to the year 2015, but may be interpreted as long-duration impacts that extend indefinitely beyond 2015.  
 (b) Except for the No-Action and Non-Aviation alternatives, direct employment effects include aircraft maintenance activities of Lockheed. This existing tenant of the base holds an interim lease that probably would be renewed under all alternatives except No-Action. Projected expansion of these activities by Lockheed is included in the employment estimates shown. Population impacts (and related effects to housing, public services, public finance, and so on) also include the effects of projected expansion of Lockheed activities on the base.  
 (c) Projected shortfalls assume no offsetting increases in revenues or service outbacks are instituted.

Table 5.1-1. Comparison of Reuse Alternatives<sup>1a</sup>  
Page 2 of 2

	No-Action (Residual Base Operations/Caretaker Status)	Change from No-Action Alternative		
		Airport with Mixed Use Alternative	Aircraft Maintenance Center Alternative	Non-Aviation Alternative
Public Finance <sup>1b</sup> (Continued)				
City of Highland	Shortfalls to \$180,000/year.	Positive; shortfalls offset by FY 2003.	Positive; shortfalls offset by FY 2002.	Positive; shortfalls offset by FY 2002.
City of Loma Linda	Shortfalls to \$270,000/year.	Positive; shortfalls offset by FY 2003.	Positive; shortfalls offset by FY 2005.	Positive; shortfalls offset by FY 2003.
City of Cotton	Shortfalls to \$200,000/year.	Positive; shortfalls offset by FY 1998.	Positive; shortfalls offset by FY 1998.	Positive; shortfalls offset by FY 1998.
Other Relevant Resources				
Transportation	Base-related traffic reductions on local roads overshadowed by projected increases in area population from other sources.	Substantial traffic increases on local roads due to development of office/industrial park, commercial, and aviation activities.	Moderate traffic increases on local roads due to development of industrial, commercial, mining, and aviation activities.	Substantial traffic increases on local roads due to development of family residences, office/industrial park, and commercial activities.
Utilities	Projected growth in demand for water, wastewater treatment, solid waste disposal, and energy would be less than 1 percent lower than local forecasts.	Increased demand for utilities within local forecasts of demand from other sources.	Increased demand for utilities within local forecasts of demand from other sources.	Increased demand for utilities within local forecasts of demand from other sources.
Airspace	Beneficial effect on air traffic and airspace use in the ROI by eliminating the source of potential congestion in the overlapping airspace used for simultaneous Norton/Ontario arrivals.	No near-term changes in operating procedures of the Ontario International Airport; increased competition for general aviation services depending on fees charged.	No near-term changes in operating procedures of the Ontario International Airport; increased competition for general aviation services depending on fees charged.	No change from No-Action.

Notes:

- (a) All impacts presented in this table apply specifically to the year 2015, but may be interpreted as long-duration impacts that extend indefinitely beyond 2015.
- (b) Except for the No-Action and Non-Aviation alternatives, direct employment effects include aircraft maintenance activities of Lockheed. This existing tenant of the base holds an interim lease that probably would be renewed under all alternatives except No-Action. Projected expansion of these activities by Lockheed is included in the employment estimates shown. Population impacts (and related effects to housing, public services, public finances, and so on) also include the effects of projected expansion of Lockheed activities on the base.
- (c) Projected shortfalls assume no offsetting increases in revenues or service outbacks are instituted.

Non-Aviation alternatives would rank behind those for the Proposed Action by 2015. Under the No-Action Alternative, caretaker activities at the base would provide less than 70 total jobs, and earnings of less than \$2 million annually. Existing and projected aircraft maintenance activities by Lockheed are included in the direct effects of all alternatives except the Non-Aviation and No-Action alternatives.

Ultimately, all of the reuse alternatives (except the No-Action Alternative) would generate more employment and earnings than were provided by the operation of Norton AFB prior to the drawdown associated with the impending base closure. For each of the reuse alternatives, both employment and earnings show continuous increases throughout the 21-year projection period following base closure. Employment effects of these magnitudes are not expected to result in regional or local labor shortages by drawing workers from competing industries.

## **5.2 POPULATION**

Regional and ACS population impacts of the reuse alternatives considered for Norton AFB all begin in 1995, following base closure, and subsequently diverge over time. In-migration is projected to be greater under the Proposed Action than under any of the other three development alternatives. Over the long term (by 2015), regional population impacts under the Proposed Action are projected to exceed those associated with the post-closure condition by more than 34,000 persons. The in-migrants under the Non-Aviation Alternative are anticipated to be fewer than those accompanying the Proposed Action; the population impacts under both the Airport with Mixed Use Alternative and the Aircraft Maintenance Center Alternative are anticipated to be less than either the Proposed Action or Non-Aviation Alternative. Population impacts of the No-Action Alternative are projected at zero over the entire two decades examined in this study since it is assumed that a DMT from the time of closure would consist of local hires. The greatest amount of population in-migration associated with reuse of Norton AFB is projected for San Bernardino County, with most of the impacts occurring in the cities of San Bernardino, Redlands, and Highland.

The rates at which population increases would occur during the study period are similar to the rates of change projected for economic impacts under each alternative.

## **5.3 HOUSING**

Housing impacts parallel population impacts under the reuse alternatives considered for Norton AFB. The housing necessary to accommodate in-migrants under the Proposed Action is projected at nearly 12,000 units over the long term, about 60 percent more than that resulting from the Aircraft



Maintenance Center Alternative. Housing impacts under both the Airport with Mixed Use Alternative and the Non-Aviation Alternative are expected to fall between these two extremes, though much closer to those associated with the Proposed Action. Housing demands under these four alternatives are similar through about 2005, after which they begin to differ markedly. As is the case with population impacts, housing demand resulting from the No-Action Alternative is expected to be zero over the years covered in this study. The greatest housing impacts due to reuse of Norton AFB are projected for San Bernardino County, mostly in the cities of San Bernardino, Redlands, and Highland. No alternative is expected to result in shortages of available housing.

#### **5.4 PUBLIC SERVICES**

Potential demand for public services is expected to follow the trend and distribution of project-related population under the Proposed Action and each alternative. To serve project-related demand, changes in service staffing and facilities infrastructure may be required to maintain current levels of service. Demand for municipal public services (including local government, police and fire protection, and public education) would be greatest under the Non-Aviation Alternative for the short term and greatest under the Proposed Action for the long term. The ability of local jurisdictions to respond to these changes in service demand would be a function of the rate of project-related demand change and availability of resources to serve these demands. In most jurisdictions, resources would prove adequate; however, services in the city of Highland likely would need to be expanded to meet increased demand.

Additional direct impacts to public services would occur under each alternative (except the No-Action Alternative) as a result of additional area and infrastructure at Norton AFB shifting from federal administration to public administration. The base is located within the city limits of San Bernardino, excluding a 30-acre parcel located in the city of Highland. Following disposition of any parcel to the private sector, the city would become responsible for serving the demand for municipal services, police protection, fire protection, and health care provision over the base area.

Local demands for municipal services such as police and fire protection are reflected in requirements for local government personnel. Personnel required to serve the increased area and infrastructure of the base following its disposal, as opposed to per-capita demand generated from in-migration, could amount to as many as 75 additional employees for the city of San Bernardino for all alternatives (except the No-Action Alternative). Increased demand due to proposed project alternatives coupled with non-Norton AFB-related growth in the region would offset the decreased demand that resulted from base closure over time.

Over the long term (2015), potential public service impacts would be greatest under the Proposed Action. Under the Proposed Action, San Bernardino County would experience the greatest per-capita demand for municipal services requiring an additional 219 employees. The city of San Bernardino would experience demand for an additional 84 employees followed by the city of Redlands with 40 employees under this alternative. Under the Non-Aviation Alternative personnel requirements would total 183, 70, and 34 for the County of San Bernardino and the cities of San Bernardino and Redlands, respectively. In the long term, personnel required to serve the increased area and infrastructure of the base following its disposal would amount to as many as 75 additional employees for the city of San Bernardino for all alternatives (except the No-Action Alternative). Although actual required per-capita personnel in Highland would be less than in these other jurisdictions, Highland would need to expand its staff and infrastructure substantially to accommodate potential growth.

During the short term, estimated public school enrollments under each alternative would not exceed historical levels generated by base operations but would exceed those occurring as a result of the base closure. However, the combination of non-Norton AFB-related growth and project-related demand would offset the decline in public education demand due to base closure. In the long term, enrollments under the Proposed Action and Non-Aviation Alternative in the San Bernardino City USD are projected to require additional classroom space in order to minimize potentially adverse impacts resulting from crowded conditions.

## **5.5 PUBLIC FINANCE**

Under each of the alternatives analyzed, the net fiscal effect (projected increases in revenues less projected increases in expenditures) of the alternatives themselves represents a positive change from the deficit conditions projected under the post-closure scenario (base closed and in caretaker status) in all years over the FY 1995-2015 period. Effects associated with the Proposed Action provide the greatest benefits (positive changes in net fiscal effects compared to closure conditions) to all jurisdictions analyzed, followed by the Airport with Mixed Use Alternative, the Non-Aviation Alternative, and the Aircraft Maintenance Center Alternative.

In several instances, however, when the effects of closing the base and converting it to civilian use are taken into account, the projected benefits of the alternatives themselves would not be sufficient to completely offset projected deficits under a closed base scenario in any year over the FY 1995-2015 period. This is the case for the potentially affected school districts under all alternatives and is due principally to the loss of P.L. 81-874 program revenues that are not considered local source revenue and are not made up by state aid program revenues. These shortfalls generally

amount to less than 1 percent of district budgets. Additional revenue sources and/or cutbacks in service levels would be required to maintain a balanced financial position for these jurisdictions. These shortfalls may be offset somewhat by the additional revenue associated with the school-age dependents of FAA employees who would work on site under each alternative.

For the city of San Bernardino the net fiscal effects of all alternatives except the Aircraft Maintenance Center are projected to more than offset projected post-closure deficits in all years over the FY 1995-2015 period. Under the Aircraft Maintenance Center Alternative, post-closure deficits would not be offset until FY 1998. The remaining potentially affected jurisdictions are projected to face varying levels of shortfalls during the early years of project development. San Bernardino County would still experience a deficit condition (ranging up to \$4 million, occurring in FY 1995) over the FY 1995-2005 period under the Non-Aviation Alternative. Under the Proposed Action, the Airport with Mixed Use Alternative, and the Aircraft Maintenance Center Alternative, closure deficits in the county would not be offset by projected surpluses until FY 2003.

Similar patterns are evident for the remaining municipalities but not at levels projected for the county. The net positive effects of reuse would offset projected closure deficits generally over the FY 1997-2005 period for all alternatives.

## **5.6 OTHER RELEVANT RESOURCES**

### **5.6.1 Transportation**

Under the Proposed Action or any of the development alternatives, the seven key local roads with access to the base would be directly impacted by significant increases in volumes of traffic attributed to development of the OIP and commercial, institutional, residential, and aviation land uses. The seven local roads with access to the base are Tippecanoe Avenue, Mill Street, Del Rosa Drive, Third and Fifth streets, Victoria Avenue, and Alabama Street/Palm Avenue.

Under closure conditions, traffic on base access roads would be reduced to that generated by a 50-person DMT crew and residual base operations. During the period 1995-2015, an estimated 2.5 percent annual growth in ambient traffic flows on key roads would compensate for traffic volume reduction due to base closure.

Under all reuse alternatives, the regional system of freeways would be impacted. Even without the reuse of the base, the LOS on I-10 and I-215 would deteriorate to level F due mainly to cumulative impacts of development projects in the vicinity of Norton AFB. Implementation of the

circulation element of San Bernardino County's plan could reduce freeway traffic and partially mitigate these impacts.

Under all reuse alternatives, most intersections along Tippecanoe Avenue/Anderson Avenue between Mill Street and Redlands Boulevard, particularly at Rosewood Avenue and Redlands Boulevard, would operate in excess of capacity. The intersection of Waterman Avenue/Redlands Boulevard would operate near or in excess of capacity.

Under all reuse alternatives, existing on-base roads would be used in the short term during the construction period, but ultimately the entire on-base network would be upgraded and reconstructed to accommodate new land uses. Without upgrading, the on-base road network would likely operate below LOS E and would provide inadequate accessibility.

Under all reuse alternatives, the demand on public transportation is expected to increase in proportion to increases in regional population; however, there will be no significant impact on the public transportation infrastructure.

All reuse alternatives include roadway improvements to facilitate movement of goods by truck to on-site land uses.

Under the Proposed Action, improvements to Fifth, Mill, and Alabama streets would be required to maintain LOS E or above. Fifth Street would need to be widened to four through lanes between Del Rosa Drive and Victoria Avenue by 2003. This would include widening the two-lane bridge over City Creek near SR-30 to four lanes. Alabama Street would also need to be widened to four through lanes between Palmetto Avenue and Third Street by 2013. In addition, Mill Street is expected to be widened to four through lanes between Waterman and Tippecanoe avenues. This would be required to be completed by 2006 to maintain LOS E or above. Other key local roads would operate at LOS D or better during the planning period.

Under the Airport with Mixed Use Alternative, improvements would be required to Mill and Fifth streets, including widening the bridge over City Creek, to maintain LOS E or above. Provided Fifth Street is widened to four lanes between Del Rosa Drive and Victoria Avenue in 2006, it would operate at LOS B. Similarly if Mill Street is widened to four lanes between Waterman and Tippecanoe avenues by 2011, it would operate at LOS A. All other key roads, without improvements, would operate at LOS D or better in 2015.

Under the Aircraft Maintenance Center Alternative, improvements would be required to segments of Fifth and Mill streets, by 2005 and 2015, respectively, including widening the bridge over City Creek, to maintain service at LOS E or above. With these assumed improvements, all local roads would maintain LOS C or better through the year 2015, except

Alabama Street between Palmetto Avenue and Third Street, which would operate at LOS E by 2015.

Under the Non-Aviation Alternative, improvements to Fifth, Alabama, and Mill streets would be required in 2003, 2008, and 2009, respectively, to maintain LOS E or above. With these assumed improvements, all local key roads would maintain LOS D or better through 2015.

A minor loss to Ontario International Airport passengers of base-related air travel is expected, and would be more than compensated for by non-base-related population growth in the area. Likewise, a negligible reduction in AMTRAK ridership would be offset by natural population growth.

#### **5.6.2 Utilities**

The utilities projections for this analysis, including the demand for water and wastewater treatment, solid waste disposal, electricity, and natural gas were made both for on-site Norton AFB reuse activities, as well as resultant increases in domestic demand associated with direct and indirect population changes in the area. Electricity and natural gas customers using interruptible service will not be additionally impacted by the demands of the various reuse alternatives. Private wells in the region will not be impacted by the various reuse alternatives. Further information concerning water availability/quality issues are discussed in the EIS document in Sections 3.4.2 and 4.4.2, Water Resources, and Sections 3.3 and 4.3, Hazardous Materials and Hazardous Waste Management.

By 2015, San Bernardino Valley utility purveyors would experience the greatest levels of increased demand over post-closure conditions under the Proposed Action. Levels of utility demand in 2015 would range from an increase of 1.0 percent for natural gas to 4.7 percent for electricity. Water increases are estimated at 4.4 percent, wastewater at 4.5 percent, and solid waste disposal at 2.4 percent. Under the Airport with Mixed Use Alternative, estimated demand increases range from 0.7 percent for natural gas to 3.5 percent for electricity over closure conditions. Under the Aircraft Maintenance Center Alternative utility demands range from an increase of 0.6 percent for natural gas to 2.8 percent for electricity. Utility demands resulting from the Non-Aviation Alternative range from an increase of 0.8 percent for natural gas to 3.9 percent for electricity.

#### **5.6.3 Airspace**

Operating procedures of the Ontario International Airport would not require any near-term change under the Proposed Action and any of the reuse alternatives. However, as air traffic would increase at Ontario in the future, changes may be necessary to accommodate both the Norton and Ontario traffic. Changes in the operating procedures for general aviation aircraft

owners may be required under the Proposed Action. Aircraft flying in and out of the Redlands, Riverside, and Rialto municipal airports as well as other visual flight rule aircraft transiting the area may be required to contact the air traffic control tower if their route of flight would take them through airspace within a 5-mile radius of Norton. Aircraft could avoid this area with little diversion, and not be required to contact the Norton control tower. This would not be considered a problem for general aviation aircraft operations in the area.

While the Proposed Action would not require any airspace realignments or system encroachment on other airspace users, any such requirements would not prevent smaller airports from operating successfully under the Proposed Action. Growth in demand for general aviation services, due to population growth could be met by the smaller airports.

## 6.0 REFERENCES

---

- Aguilera, J., 1991. *Personal communication with Jim Aguilera, Director of Community Development, City of Colton, California, June.*
- Beach, B., 1991. *Personal communication with Bob Beach, Fire Division Chief, Colton Fire Department, Colton, California, June.*
- Bellandi, J., 1991. *Personal communication with Joseph Bellandi, San Bernardino County Solid Waste Management Department.*
- Burns, J., 1991. *Personal communication/letter from James Burns, Southern California Edison Company, June.*
- California Department of Education, 1984. Enrollment, Graduates, and Staff in California Public School Districts, 1984-85, CBEDS Data Collection, Sacramento, California, October.
- California Department of Education, 1987. Enrollment, Graduates, Dropouts, and Staff in California Public School Districts, 1987-88, CBEDS Data Collection, Sacramento, California, October.
- California Department of Education, 1988. Enrollment, Graduates, Dropouts, and Staff in California Public School Districts, 1988-89, CBEDS Data Collection, Sacramento, California, October.
- California Department of Education, 1989. Enrollment, Graduates, Dropouts, and Staff in California Public School Districts, 1989-90, CBEDS Data Collection, Sacramento, California, October.
- California Department of Finance, 1986. Projected Total Population of California Counties July 1, 1985 to July 1, 2020, Report 86 P-1, California Department of Finance, Sacramento, California.
- California Department of Finance, 1989. Household Projections for California Counties: 1985-2020, Report 89 P-2, California Department of Finance, Sacramento, California.
- California Department of Finance, 1990a. Population and Housing Estimates for California Cities and Counties, Summary Report E-5, California Department of Finance, Sacramento, California.
- California Department of Finance, 1990b. Population Estimates for California State and Counties, Provisional Estimates July 1, 1989 and Revised Estimates 1986, 1987, 1988, Report 89-E-2, California Department of Finance, Sacramento, California.
- California Department of Finance, 1991. Interim Population Projections for California State and Counties 1990-2005, Report 91 P-1, California Department of Finance, Sacramento, California.
- California Department of Water Resources, 1986. San Bernardino-San Geronimo Water Resources Management Investigation, December.

- California Employment Development Department, 1990. Annual Planning Information, Riverside-San Bernardino Metropolitan Statistical Area, July.
- California Employment Development Department, 1991. Labor Market Bulletin, Riverside-San Bernardino Area, November 1990 and February 1991, Riverside-San Bernardino, California.
- California Energy Commission, 1990. Electricity Report, P-106-90-002. October.
- Cartwright, J.V., R.M. Beemiller and R.D. Gustely, 1981. RIMS II, Regional Input-Output Modeling System, U.S. Department of Commerce, Bureau of Economic Analysis, Washington, DC.
- City of Colton, see Colton, City of.
- City of Highland, see Highland, City of.
- City of Loma Linda, see Loma Linda, City of.
- City of Redlands, see Redlands, City of.
- City of San Bernardino, see San Bernardino, City of.
- Cobb, S., 1991. Interoffice memorandum from Steven Cobb, San Bernardino Fire Department Captain, to Chief Wright, Fire Chief, San Bernardino, California, June 2.
- Colton, City of, 1987. Preliminary General Plan, Planning Commission, Colton, California.
- Commuter Transportation Services, Inc., 1989. Unpublished information for Norton AFB, California, March.
- Crookshank, 1991. Personal communication with TSgt. Crookshank, Resource Management, March AFB, California, June.
- Diehl, Evans & Co., 1990. Independent Auditors' Report for the City of Colton, FY 1989, Irvine, California.
- Feldon, M., 1991. Personal communication with M. Feldon, Public Relations Administrator, Jerry L. Pettis VA Hospital, San Bernardino, California, June.
- Fleming Reiss & Co., 1988. San Bernardino City Unified School District, San Bernardino, California, County of San Bernardino, Annual Report, Year Ended June 30, 1988, San Bernardino, California.
- Fleming Reiss & Co., 1989. San Bernardino City Unified School District, San Bernardino, California, County of San Bernardino, Annual Report, Year Ended June 30, 1989, San Bernardino, California.
- Fleming Reiss & Co., 1990. San Bernardino City Unified School District, San Bernardino, California, County of San Bernardino, Annual Report, Year Ended June 30, 1990, San Bernardino, California.



- Flum, 1991. Letter from Kevin Flum, Technical Supervisor, Southern California Gas Company, May.
- Forsythe, B., 1991. Personal communication with Bob Forsythe, Division Chief of Operations, Redlands Fire Department, Redlands, California, June.
- Fowler, D., 1991. Personal communication Ontario TRACON, Ontario International Airport, California, 8 July.
- Galbreath, L., 1991. Personal communication with Liz Galbreath, Educational Demographics, California Department of Education, Sacramento, California, February.
- Garrison, M., 1991. Personal communication with Mary Garrison, Personnel, San Bernardino County, San Bernardino, California, February.
- Highland, City of, 1990. City of Highland, California, Comprehensive Annual Financial Report For Fiscal Year Ended, Highland, California, June 30.
- Highland, City of, 1991. Interim General Plan, Department of Planning, Highland, California.
- Highland, City of, Redevelopment Agency, 1991. Draft Environmental Impact Report for the Highland Redevelopment Project. SCH #90020627, Highland Redevelopment Agency, Highland, California.
- Hill, P., 1991. Personal communication with Peter Hill, Chief, Loma Linda Department of Public Safety, Loma Linda, California, June.
- Hughes, J., 1991. Personal communication with Joseph A. Hughes, Management Analyst, City of Highland, Highland, California, May.
- Jacobs, McDermith & Schaich, 1990. Redlands Unified School District, San Bernardino County, Redlands, California, Audit Report, June 30, 1990, San Bernardino, California.
- Josie, M., 1991. Personal communication with M. Josie, Data Processor, California State Department of Health, San Bernardino, California, June.
- Loma Linda, City of, 1988. City of Loma Linda, Comprehensive Annual Financial Report for the Year Ended June 30, 1988, Loma Linda, California.
- Loma Linda, City of, 1989. City of Loma Linda, Comprehensive Annual Financial Report for the Year Ended June 30, 1989, Loma Linda, California.
- Loma Linda, City of, 1990. City of Loma Linda, Comprehensive Annual Financial Report for the Year Ended June 30, 1990, Loma Linda, California.
- Maier, T., 1991. Personal communication with Lt. Thomas Maier, City of San Bernardino Police Department, San Bernardino, California, June.
- Means, R.S., Co., Inc., 1989. Means Square Foot Cost, 1990, Kingston, Massachusetts.

- Mendoza, A., 1991. Personal communication with A. Mendoza, Southern California Gas Company, July 24.
- Merwin, T. 1991. Personal communication with T. Merwin, Aviation Program Manager, Southern California Association of Governments, Los Angeles, California, February.
- Moreno, M., 1991. Personal communication with Manuel Moreno, Public Services Department, City of San Bernardino, California, June.
- Nelson, L., 1991. Personal communication with Lewis Nelson, Captain, Redlands Police Department, Redlands, California, June.
- P&D Technologies, 1991. Airport Master Plan for the Reuse of Norton Air Force Base, Final Report, County of San Bernardino and Inland Valley Development Agency.
- Palermo, G., 1991. Personal communication with Ginger Palermo, Attendance, Redlands Unified School District, Redlands, California, June.
- Redlands, City of, 1986. Title 19, Growth Management, Municipal Code, Adopted 1986.
- Redlands, City of, 1988. Redlands General Plan Update, Working Paper 1: Existing Conditions and Planning Issues, Department of Planning, Redlands, California.
- Redlands, City of, 1989a. City of Redlands, California, Comprehensive Annual Financial Report for the Year Ended June 30, 1989, Redlands, California.
- Redlands, City of, 1989b. Draft Housing Element, 1989-1994, Department of Planning, Redlands, California.
- Redlands, City of, 1990. City of Redlands, California, Comprehensive Annual Financial Report for the Year Ended June 30, 1990, Redlands, California.
- Redlands, City of, 1991. Resolution No. 4738, Redlands, California.
- Rene, M., 1991. Personal communication with M. Rene, Department of Consumer Affairs, Sacramento, California, June.
- Roe, M., 1991. Personal communication with M. Roe, Special Project Coordinator, San Bernardino Municipal Water Department/Water Reclamation, June.
- San Bernardino Area Chamber of Commerce, 1990. Community Economic Profile, San Bernardino, California.
- San Bernardino, City of, 1988. Circulation Element General Plan Update, Technical Background Report 1, prepared by Envicom Corporation, February.
- San Bernardino, City of, 1989a. City of San Bernardino General Plan, Department of Planning, San Bernardino, California.
- San Bernardino, City of, 1989b. Comprehensive Annual Financial Report for the Year Ended June 30, 1988, City of San Bernardino, San Bernardino, California.

- San Bernardino, City of, 1989c. Comprehensive Annual Financial Report for the Year Ended June 30, 1989, City of San Bernardino, San Bernardino, California.
- San Bernardino, City of, undated. Government structure organizational chart (a photocopy), San Bernardino, California.
- San Bernardino, City of, Water Department, 1987. City of San Bernardino Wastewater Treatment Plant Focused Facilities Master Plan, prepared by John Carollo Engineers.
- San Bernardino County, 1988. County of San Bernardino, California, Comprehensive Annual Financial Report For the Year Ended June 30, 1988.
- San Bernardino County, 1989. County of San Bernardino, California, Comprehensive Annual Financial Report For the Year Ended June 30, 1989.
- San Bernardino County, 1990a. County of San Bernardino, California, Comprehensive Annual Financial Report For the Year Ended June 30, 1990.
- San Bernardino County, 1990b. General Plan, Environmental Public Works Agency, Department of Land Management, Office of Planning, San Bernardino County, California.
- San Bernardino County, 1990c. Faxed letter, San Bernardino Sanitary Landfill Capacity, June 30.
- San Bernardino County, 1991. The Board of Supervisors of San Bernardino County Welcomes You, a brochure introducing the Board of Supervisors, San Bernardino, California.
- San Bernardino County Solid Waste Management Department, 1991. San Bernardino County Solid Waste Management System Update, San Bernardino, California, January.
- San Bernardino County Superintendent of Schools, 1989. Demographic and Education Conditions of Public Schools in San Bernardino County 1987-88, A Statistical Report for 1989, Research, Evaluation & Administration Department, San Bernardino, California.
- San Bernardino County Superintendent of Schools, 1990. Demographic and Education Conditions of Public Schools in San Bernardino County 1988-89, A Statistical Report for 1990, Research, Evaluation & Administration Department, San Bernardino, California.
- San Bernardino Valley Municipal Water District, 1990. Task 1 Memorandum Review Current Water Supply Plans and Needs, October.
- SCAG, see Southern California Association of Governments.
- Shaw, J., 1991. Personal communication with Jeffrey Shaw, Director of Planning and Community Development, City of Redlands, California, June.
- Soren McAdam & Bartells, 1990. Colton Joint Unified School District, County of San Bernardino, Colton, California, Audit Report, Redlands, California, June 30.
- Southern California Association of Governments, 1989a. 1987 Employment, Population, and Housing Estimates and 2010 Projections, Riverside and San Bernardino Counties, Los Angeles, California.

- Southern California Association of Governments, 1989b. Growth Management Plan, February, 1989, Growth Management Program, Community & Economic Development Department, Los Angeles, California.
- Southern California Association of Governments, 1991. Southern California Aviation System Study Update, April.
- Spiegel, D. and G.J.D. Hewing, 1989. Economic Impact Report of the Proposed Closure of Chanute AFB on the Village of Rantoul, University of Illinois, Urbana-Champaign.
- Spencer, L., 1991. Personal communication with Linda Spencer, Attendance, San Bernardino City Unified School District, San Bernardino, California, June.
- Stratton, B., 1991. Personal communication with Bob Stratton, Chief of Police, Colton Police Department, Colton, California, June.
- Transportation Research Board, 1985. Highway Capacity Manual & Special Report 209, National Research Council, Washington, DC.
- U.S. Air Force, 1988. Norton AFB Economic Resource Impact Statement: FY: 1987, Norton AFB, California.
- U.S. Air Force, 1989. Norton AFB Economic Resource Impact Statement: FY: 1988, Norton AFB, California.
- U.S. Air Force, 1990a. Final Environmental Impact Statement (EIS) for the Closure of Norton Air Force Base, California.
- U.S. Air Force, 1990b. Norton AFB Economic Resource Impact Statement: FY 1989, Norton AFB, California.
- U.S. Air Force, 1990c. Norton AFB Economic Resource Impact Statement, 1985 through 1990, prepared by 63rd MAW/ACC.
- U.S. Air Force, 1991a. Final Environmental Impact Statement (EIS) for the Realignment of March AFB, California.
- U.S. Air Force, 1991b. Norton AFB Economics Resource Impact Statement: FY: 1990, Norton AFB, California.
- U.S. Air Force, 1991c. Computer print-out of Norton AFB personnel by zip code.
- U.S. Bureau of the Census, 1981. Housing Units Authorized by Building Permits and Public Contracts: Annual 1980, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1982a. 1980 Census of Population, Volume 1, Characteristics of the Population, Chapter B: General Population Characteristics, Part 6, California, Government Printing Office, Washington, DC.

- U.S. Bureau of the Census, 1982b. 1980 Census of Housing, Volume 1, Characteristics of Housing Units, Chapter A: General Housing Characteristics, Part 6, California, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1982c. Housing Units Authorized by Building Permits and Public Contracts: Annual 1981, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1983. Housing Units Authorized by Building Permits and Public Contracts: Annual 1982, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1984. Housing Units Authorized by Building Permits and Public Contracts: Annual 1983, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1985. Housing Units Authorized by Building Permits and Public Contracts: Annual 1984, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1986. Housing Units Authorized by Building Permits and Public Contracts: Annual 1985, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1987a. Geographical Mobility: 1995, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1987b. Housing Units Authorized by Building Permits and Public Contracts: Annual 1986, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1988. Housing Units Authorized by Building Permits and Public Contracts: Annual 1987, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1989. Housing Units Authorized by Building Permits and Public Contracts: Annual 1988, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1990. Housing Units Authorized by Building Permits and Public Contracts: December 1990, Government Printing Office, Washington, DC.
- U.S. Bureau of the Census, 1991. 1990 Census of Population and Housing, Summary Tape File 1, U.S. Bureau of the Census, Suitland, Maryland.
- U.S. Bureau of Economic Analysis, 1990a. Regional Economic Information System, Machine-readable county and state data for employment and earnings by industrial sector, population and personal income, 1969-1988, Department of Commerce, Washington, DC, April.
- U.S. Bureau of Economic Analysis, 1990b. BEA Regional Projections to 2040, Volume 2: Metropolitan Statistical Areas, Washington, DC.
- U.S. Bureau of Labor Statistics, 1989. Unpublished computer output, output and employment data, by industrial sector, 1958-1988, Department of Commerce, Washington, DC, April.
- U.S. Council of Economic Advisors, 1991. Annual Report, Washington, DC, February.
- U.S. Department of Defense, 1988. Base Realignment and Closures; Report of the Defense Secretary's Commission on Base Realignment and Closure, Washington DC, December.

U.S. Department of Defense, Office of Economic Adjustment, 1990. Civilian Reuse of Former Military Bases, 1961-1990: Summary of Completed Military Base Economic Adjustment Projects, Washington, DC, April 2-June.

U.S. Department of Education, 1990. Digest of Education Statistics 1990, Office of Educational Research and Improvement, NCES 91-660, Washington, DC.

Ziilch, McAdam & Copeland, 1988. Colton Joint Unified School District. Audit Report, June 30, 1988, Redlands, California.

Ziilch, McAdam & Copeland, 1989. Colton Joint Unified School District. Audit Report, June 30, 1989, Redlands, California.

## **7.0 CONSULTATION AND COORDINATION**

---

The federal, state, and local agencies and private agencies/organizations that were contacted during the course of preparing this Socioeconomic Impact Analysis Study are listed below.

### **FEDERAL AGENCIES**

Federal Aviation Administration  
U.S. Air Force, Norton AFB  
U.S. Air Force, March AFB  
U.S. Air Force, George AFB  
U.S. Bureau of the Census  
Veterans Memorial Hospital, San Bernardino

### **STATE AGENCIES**

California Department of Consumer Affairs  
California Department of Education  
California Department of Finance  
California Department of Forestry and Fire Protection  
California Department of Health  
California Department of Transportation  
California Department of Water Resources  
California Energy Commission

### **LOCAL/REGIONAL AGENCIES**

San Bernardino County  
Auditor's Office  
Personnel Department  
Planning Office  
Public Health Department  
Regional Parks Department  
Sheriff's Office  
Solid Waste Management Department  
Superintendent of Schools  
Water Reclamation Plant  
Water Resources Department

City of San Bernardino  
Finance Department  
Fire Department  
Water Department  
Parks and Recreation Department

## **LOCAL/REGIONAL AGENCIES (Continued)**

### **City of San Bernardino (Continued)**

**Police Department**

**Public Works Department**

**San Bernardino Unified School District**

### **City of Redlands**

**Fire Department**

**Planning and Community Development Department**

**Police Department**

**Public Works Department**

**Redlands Redevelopment Agency**

**Redlands Unified School District**

### **City of Highland**

**Planning Department**

### **City of Loma Linda**

**Community Development Department**

**Public Safety Department**

### **City of Colton**

**Fire Department**

**Planning Commission**

**Police Department**

### **Inland Valley Development Agency**

### **San Bernardino Associated Governments**

### **San Bernardino Valley Municipal Water District**

### **Southern California Association of Governments**

## **PRIVATE ORGANIZATIONS**

**Southern California Edison Company**

**Southern California Gas Company**

**East Valley Water District**

**San Bernardino Valley College**



## **8.0 LIST OF PREPARERS AND CONTRIBUTORS**

---

**Thomas J. Bartol, Lieutenant Colonel, U.S. Air Force, Director, Environmental Division,  
AFRCE-BMS/DEV**

**B.S., 1972, Civil Engineering, U.S. Air Force Academy, Colorado Springs, Colorado**

**M.S., 1980, Management, Purdue University, West La Fayette, Indiana**

**Years of Experience: 19**

**Gary P. Baumgartel, Lieutenant Colonel, U.S. Air Force, Chief, AFCEE/ESE**

**B.S., 1972, Science Degree in Civil Engineering, Lowell Technological Institute, Lowell,  
Massachusetts**

**M.S., 1979, Facilities Management, Air Force Institute of Technology, School of Systems  
and Logistics, Wright-Patterson AFB, Ohio**

**Years of Experience: 20**

**Craig M. Congdon, Environmental Planner, Robert D. Niehaus, Inc.**

**B.S., 1986, Geography/Geology, University of California, Riverside**

**Years of Experience: 5**

**Dale Clark, Captain, U.S. Air Force, Environmental Project Officer, AFRCE-BMS/DEVE**

**B.S., 1982, Civil Engineering, Auburn University, Auburn, Alabama**

**M.S., 1989, Civil Engineering, North Carolina State University, Raleigh**

**Years of Experience: 10**

**C. Michael Costanzo, Regional Systems Manager, Robert D. Niehaus, Inc.**

**B.A., 1979, Geography, University of California, Santa Barbara**

**M.A., 1981, Geography, University of California, Santa Barbara**

**Ph.D., 1985, Geography, University of California, Santa Barbara**

**Years of Experience: 13**

**Tacy Costanzo, Geographer, Robert D. Niehaus, Inc.**

**B.A., 1988, Geography, University of California, Santa Barbara**

**Years of Experience: 4**

**Sandra Lee Cuttino, P.E., Environmental Manager, The Earth Technology Corporation**

**B.S., 1979, Civil Engineering, University of California, Davis**

**Years of Experience: 14**

**Paul J. Davis, Deputy Program Manager, Robert D. Niehaus, Inc.**

**B.S., 1978, Environmental Sciences, University of California, Riverside**

**M.A., 1984, Environmental Administration, University of California, Riverside**

**Years of Experience: 13**

**Carol L. Duecker, Base Manager, The Earth Technology Corporation**

**B.S., 1984, Geology, University of California, Santa Cruz**

**Years of Experience: 8**

**Mahmoud Y. Fawaz, Civil/Transportation Engineer, Robert D. Niehaus, Inc.**  
B.S., 1970, Civil Engineering, St. Joseph University, Beirut, Lebanon  
M.S., 1970, Physics Center of Mathematics, Beirut, Lebanon  
M.S., 1971, Transportation, University of California, Berkeley  
Ph.D., 1974, Transportation, University of California, Berkeley  
Years of Experience: 17

**Aaron Goldschmidt, Environmental Analyst, Robert D. Niehaus, Inc.**  
B.A., 1984, Geography, University of California, Santa Barbara  
M.A., 1987 Geography, University of California, Santa Barbara  
Years of Experience: 6

**Larry Gorenflo, Regional Systems Scientist, Robert D. Niehaus, Inc.**  
B.A., 1979, Anthropology, Pennsylvania State University, University Park  
M.A., 1981, Anthropology, University of Michigan, Ann Arbor  
Ph.D., 1985, Geography, University of California, Santa Barbara  
Years of Experience: 15

**Scott A. Hartford, Captain, U.S. Air Force, AFCEE/ESEP**  
B.S.C.E., 1986, Civil Engineering, University of New Hampshire  
M.B.A., 1990, Management, Golden Gate University  
M.S., 1991, Environmental Engineering, University of Colorado, Boulder  
Years of Experience: 6

**David G. Jury, Senior Staff Environmental Specialist, The Earth Technology Corporation**  
B.A., 1988, Geography, California State University, Long Beach  
Years of Experience: 5

**Sonya Lane, Economic Analyst, Robert D. Niehaus, Inc.**  
B.S., 1990, Business Administration/Information Systems, California State University,  
San Bernardino  
Years of Experience: 5

**William R. Livingstone, Principal Planner, Robert D. Niehaus, Inc.**  
B.A., 1950, Architecture, University of Southern California, Los Angeles  
M.A., 1966, Urban and Regional Planning, University of Southern California, Los Angeles  
Years of Experience: 41

**Luanne Lum, Environmental Analyst, Robert D. Niehaus, Inc.**  
B.E.P.D., 1985, Environmental Design and Planning, University of Colorado, Boulder  
Years of Experience: 3

**Fred Nicoloff, Systems Analyst, Robert D. Niehaus, Inc.**  
B.A., 1976, Psychology, University of Central Florida, Orlando  
M.A., 1981, Experimental Psychology, University of South Florida, Tampa  
Years of Experience: 11

**Robert D. Niehaus, Principal Economist, Robert D. Niehaus, Inc.**

**B.A., 1972, Oberlin College, Oberlin, Ohio**

**Ph.D., 1979, Economics, University of Maryland, College Park**

**Years of Experience: 20**

**Maurice E. Norton, III, Manager, Facility Engineering, The Earth Technology Corporation**

**B.A., 1966, Mathematics, Concordia College, Moorhead, Minnesota**

**Years of Experience: 21**

**Paul U. Pawlik, Economist, AFRCE-BMS/DEVE**

**B.A., 1965, Business Administration, North Central College, Naperville, Illinois**

**M.A., 1967, Economics, Roosevelt University, Chicago, Illinois**

**Ph.D., 1972, Economics, University of Arizona, Tucson**

**Years of Experience: 20**

**Adrian R. Sanchez, Senior Environmental Specialist, The Earth Technology Corporation**

**B.A., 1979, Economics, California State University, San Bernardino**

**M.A., 1983, Economics, University of Notre Dame, Notre Dame, Indiana**

**Years of Experience: 7**

**Lee Schoenecker, Air Force Community Planner, HQUSAF/CEVP**

**B.S., 1961, Political Science, University of Wisconsin, Madison**

**M.S., 1964, Urban and Regional Planning, University of Wisconsin, Madison**

**Years of Experience: 27**

**Robert M. Silsbee, Economic Analyst, Robert D. Niehaus, Inc.**

**B.A., 1980, Economics/Environmental Studies, University of California, Santa Barbara**

**M.A., 1989, Economics, University of California, Santa Barbara**

**Years of Experience: 12**

**Linda Spitzer, Technical Editor, The Earth Technology Corporation**

**A.B.A., 1959, Business, University of Denver, Denver, Colorado**

**Years of Experience: 16**

**Jeff D. Vitucci, Senior Economist, Robert D. Niehaus, Inc.**

**B.A., 1974, Environmental Studies, San Jose State University, San Jose, California**

**M.A., 1978, Urban Economics, University of California, Santa Barbara**

**Years of Experience: 13**

**Mary L. Vroman, Major, U.S. Air Force, Deputy Director, Programs and Environmental Division,**

**AFRCE-BMS/DEVP**

**B.S., 1977, Engineering Operations, Iowa State University, Ames**

**M.S., 1986, Engineering Management, Air Force Institute of Technology, Wright-Patterson**

**AFB, Ohio**

**Years of Experience: 13**

**Margarita M. Weidman, Economist, Robert D. Niehaus, Inc.**

**B.A., 1971, Economics, Women's University, Manila, Philippines**

**Research Certificate, 1976, London School of Economics and Political Science, London, England**

**M.A., 1978, Business Administration, University of Guam**

**Ph.D., 1985, Economics (Resource and Agriculture), University of Hawaii, Oahu**

**Years of Experience: 15**

**Hayley-Jane M. Wihongi, Environmental Analyst, Robert D. Niehaus, Inc.**

**B.S., 1987, Sociology, Brigham Young University, Provo, Utah**

**Years of Experience: 4**